UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

North American Electric Reliability Corporation	**)**	**Docket No. _____**
	)	

PETITION OF THE NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION FOR APPROVAL OF PROPOSED RELIABILITY STANDARD EOP-012-3

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Pursuant to Section 215(d)(1) of the Federal Power Act ("FPA")[1] and Section 39.5[2] of the Federal Energy Regulatory Commission's ("FERC" or "Commission") regulations, and the Commission's June 27, 2024 order in Docket Nos. RD24-5-000 and RD24-1-000,[3] the North American Electric Reliability Corporation ("NERC")[4] hereby submits for Commission approval proposed Reliability Standard EOP-012-3 (Extreme Cold Weather Preparedness and Operations).[5]

Multiple events since 2011 have demonstrated that the failure to prepare adequately for extreme cold weather conditions can present severe risks to reliability of the Bulk-Power System. The EOP-012 Reliability Standard comprises an important part of NERC's comprehensive framework of requirements addressing cold weather planning and operations to help address these risks and assure the reliability of the Bulk-Power System. The EOP-012 Reliability Standard addresses the specific matter of generator cold weather preparedness, with requirements consistent

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1 16 U.S.C. § 824o.

2 18 C.F.R. § 39.5 (2024).

3 *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61,204 (2024) (approving Reliability Standard EOP-012-2 and directing further revisions) [hereinafter June 2024 Order].

4 The Commission certified NERC as the electric reliability organization ("ERO") in accordance with Section 215 of the FPA on July 20, 2006. *N. Am. Elec. Reliability Corp.*, 116 FERC ¶ 61,062 (2006), *order on reh'g & compliance*, 117 FERC ¶ 61,126 (2006), *aff'd sub nom. Alcoa, Inc. v. FERC*, 564 F.3d 1342 (D.C. Cir. 2009).

5 Unless otherwise indicated, all capitalized terms used in this petition shall have the meaning set forth in the *Glossary of Terms used in NERC Reliability Standards* ("NERC Glossary"), https://www.nerc.com/pa/Stand/Glossary%20of%20Terms/Glossary_of_Terms.pdf.

with the recommendations of the FERC, NERC, and Regional Entity Staff Joint Inquiry into the causes of the February 2021 cold weather event affecting Texas and the south-central United States.[6]

Proposed Reliability Standard EOP-012-3 would further improve upon the currently effective Reliability Standard EOP-012-2 through enhanced and expanded requirements that would ensure that entities are implementing corrective actions to address known issues affecting their ability to operate reliability in cold weather in a timely manner. For those circumstances in which implementing corrective actions may not be feasible, referred to in the proposed standard as "Generator Cold Weather Constraints," proposed Reliability Standard EOP-012-3 would provide an improved framework for the identification, validation, and periodic review of such constraints. Consistent with the June 2024 Order, this framework provides clear, detailed, and objective criteria so responsible entities understand the performance that is expected of them. Proposed Reliability Standard EOP-012-3 thus addresses the Commission's directives in the June 2024 Order and would advance the reliability of the Bulk-Power System in future winter seasons.

NERC requests that the Commission approve proposed Reliability Standard EOP-012-3, along with the proposed revised definitions of the term Generator Cold Weather Constraint, as shown in **Exhibit A**, as just, reasonable, not unduly discriminatory or preferential, and in the public interest. NERC also requests that the Commission approve: (i) the associated Violation Risk Factors ("VRFs") and Violation Severity Levels ("VSLs") (**Exhibit G**); (ii) the retirement of Reliability Standard EOP-012-2; and (iii) the proposed implementation plan (**Exhibit B**).

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[6] FERC, NERC, Regional Entity Staff Report: *The February 2021 Cold Weather Outages in Texas and the South Central United States* (Nov. 2021), https://www.ferc.gov/media/february-2021-cold-weather-outages-texas-and-south-central-united-states-ferc-nerc-and [hereinafter February 2021 Event Joint Inquiry Report]. This cold weather reliability event will be referred to throughout this petition as the "February 2021 Event."

As required by Section 39.5(a)[7] of the Commission's regulations, this petition presents the technical basis and purpose of the proposed Reliability Standard, a demonstration that the proposed Reliability Standard meets the criteria identified by the Commission in Order No. 672[8] (**Exhibit F**), and a summary of the standard development history (**Exhibit H**).

The NERC Board of Trustees approved the proposed Reliability Standard on April 4, 2025 under the longstanding special rule for standards addressing regulatory directives in Section 321.5 of the NERC Rules of Procedure. As discussed more fully in **Exhibit H**, the NERC Board of Trustees found that the proposed standard was just, reasonable, not unduly discriminatory or preferential, and in the public interest, considering (among other things) whether it is practical, technically sound, technically feasible, cost-justified and serves the best interests of reliability of the Bulk Power System. In making this determination, the Board considered the development record including the comments received, the factors identified above, and the Reliability Standards approval criteria identified by the Commission in Order No. 672.

This petition is organized as follows: Section I provides an overview of this filing. Section II provides the individuals to whom notices and communications related to the filing should be provided. Section III provides relevant background regarding the regulatory structure governing the Reliability Standards approval process. Section IV provides relevant background regarding NERC's Reliability Standards framework for cold-weather preparedness and operations and the history of the EOP-012 standard. Section V provides an overview and justification for proposed Reliability Standard EOP-012-3 and the revised defined term Generator Cold Weather Constraint.

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[7] 18 C.F.R. § 39.5(a).

[8] The Commission specified in Order No. 672 certain general factors it would consider when assessing whether a particular Reliability Standard is just and reasonable. *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672 [hereinafter Order No. 672], 114 FERC ¶ 61,104, at PP 262, 321-37, *order on reh'g*, Order No. 672-A, 114 FERC ¶ 61,328 (2006).

Section VI provides a summary of the proposed implementation plan. Section VII describes NERC's strategy for monitoring the implementation of proposed Reliability Standard EOP-012-3, including how NERC intends to use a two-year compliance abeyance period to address concerns and gather additional information regarding the calculation of the Extreme Cold Weather Temperature, the measure that forms the basis for the required performance under the standard.

I. SUMMARY

NERC first developed the EOP-012 Reliability Standard in 2022 to ensure that generator owners would take the appropriate actions to prepare their facilities for extreme cold weather conditions. Extreme cold weather was a major factor in Bulk-Power System reliability events in 2011,[9] 2014,[10] 2018,[11] 2021,[12] and 2022.[13] Of these events, the February 2021 cold weather reliability event affecting Texas and the south central United States proved to be exceptionally severe. Due to the exceptionally high number of generator outages combined with exceptionally high customer demand, system operators in the Electric Reliability Council of Texas ("ERCOT") Interconnection and other neighboring areas ordered what ultimately became the largest controlled firm load shed event in United States history to avoid a complete blackout. The resulting power

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[9] *See* FERC and NERC Staff, *Report on Outages and Curtailments During the Southwest Cold Weather Event of February 1-5, 2011: Causes and Recommendations* (Aug. 2011), https://www.ferc.gov/sites/default/files/2020-04/08-16-11-report.pdf.

[10] *See* NERC, *Polar Vortex Review* (Sep. 2014), https://www.nerc.com/pa/rrm/January%202014%20Polar%20Vortex%20Review/Polar_Vortex_Review_29_Sept_2014_Final.pdf (reviewing generator outages during the January 2014 polar vortex weather event).

[11] *See* FERC and NERC Staff, *The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018* (Jul. 2019), https://www.nerc.com/pa/rrm/ea/Documents/South_Central_Cold_Weather_Event_FERC-NERC-Report_20190718.pdf.

[12] February 2021 Event Joint Inquiry Report, *supra* note 6.

[13] FERC, NERC, and Regional Entity Staff Report, *Inquiry into Bulk-Power System Operations During December 2022 Winter Storm Elliott* (Oct. 2023) [hereinafter Winter Storm Elliot Report], https://www.ferc.gov/media/winter-storm-elliott-report-inquiry-bulk-power-system-operations-during-december-2022.

outages, combined with the historically cold temperatures gripping the region, resulted in significant human and economic impacts. Many people lost their lives.

The February 2021 Event, with its devastating human and economic toll, underscored the need for strong Reliability Standards to address the causes of this and previous cold weather reliability events and help assure the reliability of the Bulk-Power System in future winter seasons. Over the next several years, NERC made the development of these Reliability Standards a high priority. Among the Reliability Standards that NERC developed was a new Reliability Standard, Reliability Standard EOP-012, addressing generator preparedness for extreme cold weather conditions.

As discussed more fully in this Petition, proposed Reliability Standard EOP-012-3 would improve upon the currently effective Reliability Standard EOP-012-2 by providing needed clarity regarding the standard's requirements for generator cold-weather preparedness and making other improvements consistent with the Commission's directives in the June 2024 Order approving Reliability Standard EOP-012-2.

Specifically, proposed Reliability Standard EOP-012-3 would improve upon Reliability Standard EOP-012-2 by:

- Providing clear, objective, and sufficiently detailed criteria for determining the limited circumstances under which a Generator Owner could declare constraints that would preclude them implementing a specific corrective action to address freeze protection issues, referred to as Generator Cold Weather Constraints;
- Requiring each Generator Owner declaring a Generator Cold Weather Constraint to submit the declaration to its Compliance Enforcement Authority for validation in a timely manner;[14]
- Requiring that Generator Owners review their validated Generator Cold Weather Constraints at least once every 36 calendar months for continued validity, instead of at least once every five calendar years, to ensure that new technologies are

[14] As discussed herein, the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process would ensure that these submissions are reviewed by the Compliance Enforcement Authority in a timely manner.

considered and circumstances preventing implementation are reevaluated on a regular basis;

- Providing shorter deadlines for Generator Owners to implement Corrective Action Plans developed in response to Generator Cold Weather Reliability Events, so that known freezing issues are addressed more quickly;
- Requiring that any extension of a Corrective Action Plan implementation deadline beyond the maximum implementation timeframe provided by the standard be pre-approved by the Compliance Enforcement Authority;
- Reinforcing that Generator Owners must update their generating unit cold weather operating limitations while any Corrective Action Plan is pending completion;
- Requiring Generator Owners with new Bulk Electric System ("BES") generating units entering commercial operation on or after October 1, 2027 to have the required cold weather capability upon entering commercial operation, unless a Generator Cold Weather Constraint would apply; and
- Clarifying requirements for Corrective Action Plan timeline applicability, as identified by the Commission in the June 2024 Order.

As discussed more fully herein, these clarifications and improvements address the Commission's directives from the June 2024 Order. In so doing, the proposed Reliability Standard EOP-012-3 would improve the overall efficiency and efficacy of the EOP-012 standard and help advance the reliability of the Bulk-Power System in future cold weather seasons. NERC respectfully requests that the Commission approve proposed Reliability Standard EOP-012-3 as just, reasonable, not unduly discriminatory or preferential, and in the public interest.

II. NOTICES AND COMMUNICATIONS

Notices and communications with respect to this filing may be addressed to the

following:[15]

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III. REGULATORY FRAMEWORK

By enacting the Energy Policy Act of 2005,[16] Congress entrusted the Commission with the duties of approving and enforcing rules to ensure the reliability of the Bulk-Power System, and with the duties of certifying an ERO that would be charged with developing and enforcing mandatory Reliability Standards, subject to Commission approval. Section 215(b)(1)[17] of the FPA states that all users, owners, and operators of the Bulk-Power System in the United States will be subject to Commission-approved Reliability Standards. Section 215(d)(5)[18] of the FPA authorizes the Commission to order the ERO to submit a new or modified Reliability Standard. Section 39.5(a)[19] of the Commission's regulations requires the ERO to file with the Commission for its approval each new Reliability Standard that the ERO proposes should become mandatory and

[15] NERC respectfully requests a waiver of Rule 203 of the Commission's regulations, 18 C.F.R. § 385.203, to allow the inclusion of more than two persons on the service list in this proceeding.

[16] 16 U.S.C. § 824o.

[17] *Id.* § 824o(b)(1).

[18] *Id.* § 824o(d)(5).

[19] 18 C.F.R. § 39.5(a).

enforceable in the United States, and each modification to a Reliability Standard that the ERO proposes should be made effective.

The Commission is vested with the regulatory responsibility to approve Reliability Standards that protect the reliability of the Bulk-Power System and to ensure that Reliability Standards are just, reasonable, not unduly discriminatory or preferential, and in the public interest. Pursuant to Section 215(d)(2) of the FPA[20] and Section 39.5(c)[21] of the Commission's regulations, the Commission will give due weight to the technical expertise of the ERO with respect to the content of a Reliability Standard.

NERC develops Reliability Standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC Standard Processes Manual.[22] In its order certifying NERC as the Commission's ERO, the Commission found that NERC's rules provide for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing Reliability Standards,[23] and thus satisfy the Commission's criteria.[24] The development process is open to any person or entity with a legitimate interest in the reliability of the Bulk-Power System. NERC considers the comments of all stakeholders. Under NERC's usual processes for standards development, a stakeholder ballot body must approve, and the NERC Board of Trustees must adopt, a new or revised Reliability Standard before NERC submits the Reliability Standard to the Commission for approval.

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20 16 U.S.C. § 824o(d)(2).

21 18 C.F.R. § 39.5(c)(1).

22 The NERC Rules of Procedure, including Appendix 3A, NERC Standard Processes Manual, are available at http://www.nerc.com/AboutNERC/Pages/Rules-of-Procedure.aspx.

23 *N. Am. Elec. Reliability Corp.*, 116 FERC ¶ 61,062 at P 250 (2006).

24 Order No. 672*, supra* note 8, at PP 268, 270.

Section 321 of the NERC Rules of Procedure is a special rule that describes the alternative processes by which the NERC Board of Trustees may approve a Reliability Standard to address a directive of the Board or an applicable governmental authority, such as the Commission, where the stakeholder ballot body has failed to do so. Consistent with Section 215 of the Federal Power Act, the alternative processes described in Section 321 of the NERC Rules of Procedure provide for reasonable notice and opportunity for public comment, due process, openness, and balance of interests in developing Reliability Standards in the special circumstances to which the rule applies.[25]

IV. BACKGROUND

A. Overview of NERC's Cold Weather Reliability Standards Framework

The EOP-012 Reliability Standard is an important part of NERC's framework to assure the reliability of the Bulk-Power System during extreme cold conditions. In its summary of the key findings and causes of the February 2021 Event, the joint inquiry team identified that two causes, both triggered by cold weather, lead to the Event, and that these two causes form a recurring pattern in cold weather events over the previous ten years. The first cause was that generating units unprepared for cold weather failed in large numbers. The second cause was related to supply issues caused by the decline in natural gas production, exacerbated by the increasing reliance on natural gas fired generation.[26] The joint inquiry team identified that, despite prior recommendations that entities take steps to prepare for winter, a significant number of generating units failed to have any winterization plans.[27] The joint inquiry team further determined that 81% of the freeze-related

[25] *See* 18 U.S.C. § 39.3(b)(2)(iv) (describing requirements for ERO certification).

[26] February 2021 Event Joint Inquiry Report, *supra* note 6, at 11-12.

[27] *Id.* at 17.

generating unit outages occurred at temperatures above the unit's stated ambient design temperature.[28]

To address these and other findings, the February 2021 Event Joint Inquiry Report contained recommendations for further action in the areas of cold weather preparedness and operations. Recommendation 1 consisted of ten sub-recommendations for Reliability Standards enhancements. Key Recommendations 1a-1g related to enhanced requirements for generator cold weather preparedness, including implementing freeze protection measures, addressing the causes of freezing issues, providing cold weather plan preparedness plan training on an annual basis, and understanding the generation capacity that is available in cold weather.[29] Key Recommendations 1h-1i recommended requirements to limit the participation of critical natural gas production facilities in load shedding schemes to protect electric system reliability in cold weather.[30] Key Recommendation 1j recommended requirements to minimize the overlap of circuits used in manual and automatic load shed circuits to help maintain system frequency when operators have the best chance of doing so.[31]

Consistent with the recommendations of the February 2021 Event Joint Inquiry Report, NERC developed Reliability Standards responsive to these recommendations in two phases. The EOP-012 Reliability Standard addresses the critical matter of generator cold weather preparedness, as discussed more fully in the following sections of this filing. Other Reliability Standards address other matters necessary for assuring cold weather reliability as identified in the report. These standards are as follows:

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28 *Id.*

29 February 2021 Event Joint Inquiry Report at 184-190.

30 *Id.* at 208-209.

31 *Id.* at 209.

Reliability Standards IRO-010-4 and TOP-003-5: developed in response to the recommendations of the joint inquiry team examining the January 2018 cold weather event affecting the south central United States,[32] Reliability Standards IRO-010-4 and TOP-003-5 address the inclusion of generator cold weather data and information in Reliability Coordinator, Transmission Operator, and Balancing Authority data specifications, including data and information regarding generator operating limitations in cold weather and the expected operating temperature of the generator. The Commission approved these Reliability Standards in 2021.[33]

Reliability Standard EOP-011-4: Reliability Standard EOP-011-4 builds upon the improvements in EOP-011-3 to improve how Transmission Operators account for the overlap of manual load shed and automatic load shed in their emergency Operating Plans.[34] This standard requires Balancing Authorities, Transmission Operators, and load shedding entities identified by Transmission Operators to limit the participation of critical natural gas infrastructure loads in the demand response and emergency load shedding programs they oversee, particularly during cold weather conditions when natural gas supply issues for generation have proven to be the most challenging. The Commission approved Reliability Standard EOP-011-4 in 2024.[35]

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[32] See FERC and NERC Staff, *The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018* (Jul. 2019), https://www.nerc.com/pa/rrm/ea/Documents/South_Central_Cold_Weather_Event_FERC-NERC-Report_20190718.pdf.

[33] The Commission approved Reliability Standards IRO-010-4 and TOP-003-5 in August 2021. In this order, the Commission also approved Reliability Standard EOP-011-2, which contained requirements for Generator Owners to implement and maintain cold weather preparedness plans addressing freeze protection measures, annual inspection and maintenance for such measures, and identification of cold weather operating parameters, including fuel considerations and operating temperatures, and for providing training on such plans to generator personnel. These requirements were later moved to Reliability Standard EOP-012-1. *See N. Am. Elec. Reliability Corp.*, 176 FERC ¶ 61,119 (2021). The Commission approved subsequent versions of the IRO-010 and TOP-003 Reliability Standards, Reliability Standards IRO-010-5 and TOP-003-6.1, in November 2023, to become effective in the United States on July 1, 2025. *N. Am. Elec. Reliability Corp.*, Docket No. RD23-6-000 (2023) (delegated letter order).

[34] The Commission approved Reliability Standards EOP-011-3 and EOP-012-1 in February 2023 with directives for further modifications to EOP-012-1. *N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094 [hereinafter February 2023 Order], *reh'g denied*, 183 FERC ¶ 62,034, *order addressing arguments raised on reh'g*, 183 FERC ¶ 61,222 (2023).

[35] *N. Am. Elec. Reliability Corp.*, 186 FERC ¶ 61,115 (2024).

Reliability Standard TOP-002-5: Reliability Standard TOP-002-5 advances reliability through a new requirement addressing how the Balancing Authority will prepare for operations during extreme cold weather conditions. The Commission approved Reliability Standard TOP-002-5 in 2024.[36]

For further information regarding these Reliability Standards, please refer to NERC's filings in Docket Nos. RD21-5-000, RD23-1-000, and RD24-1-000.

B. History of the EOP-012 Reliability Standard

1. Reliability Standard EOP-012-1

In October 2022, NERC submitted for Commission approval Reliability Standards EOP-011-3 and EOP-012-1, as well as three defined terms for inclusion in the NERC *Glossary*: Extreme Cold Weather Temperature, Generator Cold Weather Critical Component, and Generator Cold Weather Reliability Event.[37] Reliability Standard EOP-012-1 contained new and revised requirements intended to build on the cold weather preparedness plan and training requirements first developed in Reliability Standard EOP-011-2 for enhanced generator cold weather preparedness. Reliability Standard EOP-012-1 included requirements for freeze protection measures for both new and existing generation to provide capability to operate at the Extreme Cold Weather Temperature[38] for the location (Requirements R1 and R2, respectively); the development of enhanced cold weather preparedness plans and annual training on those plans (Requirements R3 and R5, respectively); the periodic recalculation of the Extreme Cold Weather Temperature, update of cold weather preparedness plan, and review of freeze protection measures needed to

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[36] *Id.*

[37] *Petition of NERC for Approval of Proposed Reliability Standards EOP-011-3 and EOP-012-1 and Request for Expedited Action*, Docket No. RD23-1-000 (Oct. 28, 2022).

[38] The Extreme Cold Weather Temperature is defined as "The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 1/1/2000 through the date the temperature is calculated."

provide operational capability at that temperature (Requirement R4); and the development and implementation of Corrective Action Plans to address freezing issues or insufficiencies in freeze protection measures to operate at the Extreme Cold Weather Temperature (Requirements R6 and R7, respectively).

In February 2023, the Commission approved Reliability Standard EOP-012-1 with directives for further modifications.[39] While finding that Reliability Standard EOP-012-1 represented an improvement for reliability, the Commission expressed concern with certain aspects of Reliability Standard EOP-012-1 and the proposed implementation plan, and directed NERC to revise the standard and implementation plan as follows:

Applicability, generally: The Commission directed NERC to revise the applicability of the standard to ensure that it captures all Bulk Electric System ("BES") generation resources needed for reliable operation and excludes only those generation resources not relied upon during freezing conditions.[40]

Applicability of Cold Weather Preparedness Plan and Training Requirements: The Commission directed NERC to revise Reliability Standard EOP-012-1 to ensure cold weather operating information remains available from all generators.[41]

Generator Constraints to Implementing Winterization Measures: The Commission expressed concerns that the proposed technical, commercial, or operational constraint provisions in Requirements R1 and R7 that would allow an entity to explain in a declaration why it could not comply with winterization requirements lacked clear and auditable criteria for compliance.[42] The

39 February 2023 Order, *supra* note 34.

40 *Id.* at P 58.

41 *Id.* at P 59.

42 *Id.* at P 64-65.

Commission therefore directed NERC to develop modifications to Requirements R1 and R7 "to address concerns related to the ambiguity of generator-defined declarations of technical, commercial, or operational constraints that preclude a generator owner from implementing the appropriate freeze protection measures and to ensure that the constraint declarations may not be used to opt-out of compliance with the Standard or obligations set forth in a corrective action plan."[43] Specifically, the Commission directed NERC to "include auditable criteria on permissible constraints and to identify the appropriate entity that would receive the generator owners' constraint declarations under EOP-012-1 Requirements R1 and R7."[44]

Generator Continuous Operations Capability Requirements: The Commission directed NERC to clarify certain language regarding capability requirements to better align with the stated purpose of the Reliability Standard EOP-012-1.[45]

Corrective Action Plan deadlines: The Commission found it appropriate to include a maximum time for implementing corrective actions in a Corrective Action Plan. The Commission therefore directed NERC to revise Reliability Standard EOP-012-1 to include a deadline or maximum period for the completion of corrective action plan measures where the development of Corrective Action Plans is required.[46]

Implementation Plan: The Commission agreed with commenter concerns regarding the length of the proposed implementation period of Reliability Standard EOP-012-1.[47] The Commission therefore directed NERC to require a shorter implementation period and staggered

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43 *Id.* at P 66.

44 *Id.*

45 *Id.* at PP 89-90.

46 *Id.* at P 79.

47 NERC's proposed implementation plan for Reliability Standard EOP-012-1 and EOP-011-3 provided a five-year implementation period for freeze protection capability requirements, with no specific deadline for the implementation of Corrective Action Plan measures.

implementation for unit(s) across a generator owner's fleet, stating that such an approach "will reduce reliability risks more quickly."[48]

In addition to the above-directed standards modifications, the Commission directed NERC to work with Commission staff to develop a plan on how it will assess and collect data periodically to monitor the implementation of new requirements for Generator Owners; particularly, the impact of the technical, commercial, or operational constraint provisions of Reliability Standard EOP-012-1. The Commission directed NERC to submit this plan, to include certain categories of enumerated data and other information that will include annual informational filings to the Commission, within 12 months of issuance of the order.[49]

C. Reliability Standard EOP-012-2

NERC developed Reliability Standard EOP-012-2 in response to the Commission's directives in the February 2023 Order. As discussed more fully in NERC's February 2024 petition for approval of Reliability Standard EOP-012-2,[50] Reliability Standard EOP-012-2 reflected the following revisions intended to address several of the Commission's directives from the February 2023 Order:

- Clarified the applicability of the standard, so that all Generator Owners would continue to be required to develop cold weather preparedness plans and train on those plans consistent with Reliability Standard EOP-011-2 (Applicability Section A.4.2);

- Clarified the limited exemption for the EOP-012 winterization requirements, so that it would be clear that the only units that would be exempted from applying freeze protection measures are those Bulk Electric System units that do not operate in

[48] February 2023 Order at P 88.

[49] *Id.* at PP 93-96. NERC submitted its informational filing on February 16, 2024 in Docket No. RD23-1-002. The Commission accepted NERC's filing on May 23, 2024. *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61,087 (2024) (letter order).

[50] *Petition of NERC for Approval of Proposed Reliability Standard EOP-012-2 and Request for Expedited Action*, Docket No. RD24-5-000 (Feb. 16, 2024) [hereinafter EOP-012-2 Petition].

freezing conditions (except in a limited capacity, during an Emergency) (Requirements R2, R3, R6);

- Clarified that the standard would apply to new intermittent energy resources, and they must provide capability to operate for their maximum operational duration if that is less than 12 hours (e.g., solar farm in area with less than 12 hours of sunlight in winter) (Requirement R2); and

- Removed the requirement for existing generation to run for at least one hour at the Extreme Cold Weather Temperature, as this period was too short to ensure cold weather reliability (Requirement R3).

Relevant to this proceeding, NERC also made the following revisions in Reliability Standard EOP-012-2 to address other directives from the February 2024 Order:

- Abbreviated the overall timeline for implementation of the EOP-012 standard, including fixing October 1, 2027 as the date by which new generation must meet more stringent capability requirements (Implementation Plan, Requirements R2 and R3);
- Added deadlines for completing corrective actions in a Corrective Action Plan (Requirement R7);
- Replaced the phrase "technical, commercial, or operational constraints" with the defined term Generator Cold Weather Constraint,[51] to clarify the limited circumstances under which a Generator Owner could declare constraints precluding them implementing a specific corrective action contained in a Corrective Action Plan to address freeze protection issues (Requirement R7); and

[51] NERC proposed to define Generator Cold Weather Constraint as follows:

Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions.

Criteria used to determine a constraint include practices, methods, or technologies which, given the exercise of reasonable judgment in light of the facts known at the time the decision to declare the constraint was made:

• Were not broadly implemented at generating units for comparable unit types in regions that experience similar winter climate conditions to provide reasonable assurance of efficacy;

• Could not have been expected to accomplish the desired result; or

• Could not have been implemented at a reasonable cost consistent with good business practices, reliability, or safety. A cost may be deemed "unreasonable" when implementation of selected freeze protection measure(s) are uneconomical to the extent that they would require prohibitively expensive modifications or significant expenditures on equipment with minimal remaining life.

- Clarified the steps Generator Owners would take when they declare a Generator Cold Weather Constraint, including requirements for ongoing reviews and reporting any reliability-related impacts to reliability entities as part of ongoing generating unit cold weather data reporting specifications (Requirement R8).

In June 2024, the Commission approved Reliability Standard EOP-012-2 and the associated implementation plan, and directed further changes as discussed in the following section.

D. June 2024 Order Directs Development of Proposed EOP-012-3

In the June 2024 Order, the Commission found that Reliability Standard EOP-012-2 "improves upon…Reliability Standard EOP-012-1 by clarifying the requirements for generator cold weather preparedness and by making other improvements consistent with the Commission's directives in its February 2023 Order to help ensure that more generation is available during extreme cold weather."[52] The Commission, however, expressed continuing concerns with certain aspects of Reliability Standard EOP-012-2, and directed NERC to further revise the standard. The Commission stated, "[T]he five core directives to NERC in this order are not new issues, but rather targeted modifications necessary to fully address issues identified in the Commission's prior February 2023 Order."[53] The Commission directed NERC to revise Reliability Standard EOP-012-2 to address its concerns and to file a revised standard within nine months of the date of the order, or by March 27, 2025. Specifically, the Commission directed NERC to revise the standard as follows.

52 June 2024 Order at P 2.

53 *Id.* at P 4.

1. Address Concerns Related to the Ambiguity of the Generator Cold Weather Constraint Term and Criteria

While finding that Reliability Standard EOP-012-2 improved upon the prior version of the standard with respect to the identification of constraints that may preclude the Generator Owner from implementing freeze protection measures as required by the standard, the Commission found that NERC needed to address certain ambiguities that remained.[54]

The Commission stated that, while it agreed the EOP-012 standard should not require the implementation of unproven technologies, it believed Reliability Standard EOP-012-2 and the definition of Generator Cold Weather Constraint did not provide sufficient guidance on how widely a freeze protection technology must be deployed before it would be considered a "generally implemented" technology (and thus no longer grounds for a constraint).[55] The Commission further stated that it agreed "there may be a need to account for certain cases in which the cost of retrofitting may be unnecessarily burdensome." However, the Commission found that how NERC proposed to do so (i.e., allowing generators to exclude freeze protection measures that are not available at "reasonable cost consistent with good business practices") would create a risk of inconsistent outcomes in the application of the standard. The Commission stated that to address such circumstances, "NERC should clearly define such exceptions and present them for Commission review."[56]

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54 *See* June 2024 Order at PP 41-46 (discussion of findings and concerns).

55 *Id.* at PP 42-43.

56 *Id.* at PP 44- 46. The Commission provided the following example of such clearly defined circumstances: "an attestation from a generator owner or generator operator that: (1) the generating unit is scheduled to retire within the next two years; (2) implementing freeze protection measures in accordance with the Reliability Standard would cause the generating unit to retire within two years; or (3) they would cancel a newly scheduled generating unit that has not yet achieved commercial operation if required to comply with the freeze protection requirements of a Standard."

To address its concerns, the Commission directed NERC "to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them."[57] The Commission further directed NERC to revise the definition of Generator Cold Weather Constraint to remove the references to "cost," "reasonable cost," "unreasonable cost," and "good business practices" and "replace them with criteria that are objective, unambiguous, and auditable."[58] The Commission provided examples of approaches that could satisfy its directive, such as to include a "limited and discrete list of circumstances that would qualify as acceptable constraints" or to "establish a pre-approval process for all Generator Cold Weather Constraint declarations."[59]

2. Address Concerns Regarding the Need for a Timely Review and Evaluation of Declared Generator Cold Weather Constraints by NERC

The Commission stated that, while NERC proposed to use its compliance oversight and data request mechanisms to oversee implementation of the Generator Cold Weather Constraint provisions in the EOP-012 standard, "an enhanced level of oversight remains necessary to ensure that Generator Cold Weather Constraints are only declared when warranted."[60] The Commission found that Reliability Standard EOP-012-2 "does not identify an entity to receive the Generator Cold Weather Constraint declarations, the entity responsible for timely review of the generator owners' constraint declarations, or the entity responsible for ensuring that the declarations meet the objective criteria of the … Standard."[61]

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57 *Id.* at P 47.

58 *Id.*

59 *Id.*

60 *Id.* at P 53.

61 *Id.* at P 52.

The Commission therefore directed NERC to modify the EOP-012 standard "so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner."[62] The Commission also directed NERC to include in its filing "a plan to timely review such declarations to verify compliance with proposed Reliability Standard EOP-012-2 and its successors or obligations in a corrective action plan and take corrective action where necessary."[63]

3. Address Concerns that Existing EOP-012-2 Requirement R7 Allows Too Long for Entities to Implement Corrective Actions for those Generating Units that Experience a Generator Cold Weather Reliability Event.

The Commission found that, while Reliability Standard EOP-012-2 addressed the Commission's directives to shorten deadlines for developing Corrective Action Plans for existing generating units, the Commission was concerned by the length of time provided for generators to implement Corrective Action Plans for units that experienced a Generator Cold Weather Reliability Event (e.g. freezing issue resulting in forced outage or derate).[64] Citing the known risks of generator freeze issues, the Commission stated, "For those generating units that fail to operate during an extreme cold weather reliability event, their risks must be mitigated quicker than NERC proposes regardless of whether existing or new freeze protection measures are needed on the units that experience failure."[65] The Commission further noted that these units should have already had freeze protection measures in place to operate at the Extreme Cold Weather Temperature under Requirements R2 and R3 of the standard.

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62 *Id.* at P 54. The Commission clarified that NERC may choose to delegate this task to the relevant Regional Entities.

63 *Id.*

64 *Id.* at PP 65-67.

65 *Id.* at P 67.

Accordingly, the Commission directed NERC to revise Reliability Standard EOP-012-2 Requirement R7 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. The Commission indicated that additional time may be acceptable to complete corrective actions for other generating units in a fleet that may be susceptible to the same freezing issue.[66]

4. Address the Commission's Finding that any Extensions of a Corrective Action Plan Implementation Deadline beyond the Maximum Implementation Timeframe provided by the EOP-012 Standard be Pre- Approved by NERC.

The Commission expressed concern with Reliability Standard EOP-012-2 Requirement R7, which allows a Generator Owner to extend the 24 and 48-month implementation timeframes for Corrective Action Plans. The Commission stated, "[W]ithout the appropriate oversight of generator owner's proposed updates to the corrective action plan implementation deadlines, the established maximum implementation deadlines in proposed Reliability Standard EOP-012-2, Requirement R7 have less meaning and allow a known reliability risk to remain on the Bulk-Power System for a longer time."[67] The Commission therefore directed NERC to revise the standard to "ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC."[68]

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66 *Id.* at P 68.

67 *Id.* at P 69.

68 *Id.* at P 70. In its introductory summary of this directive, the Commission further stated that NERC should "ensure that the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension." *Id.* at P 3.

5. Address the Commission's Finding regarding Corrective Action Plans for Generators that are First Commercially Operational on or after October 1, 2027

The Commission stated that, while it was persuaded by NERC's rationale that there needs to be allowances made for units that are well into their construction phase to complete corrective action plans for elements already designed, it was concerned that Reliability Standard EOP-012-2 did not clearly differentiate between projects in an advanced stage of construction and those in a lesser phase of construction. The Commission found that "generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation."[69] Based on this finding, the Commission directed NERC to revise the EOP-012 standard "to clarify that any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date."[70]

6. Address Concerns that EOP-012 Requirement R7 has Ambiguities in the Implementation Plan Timelines that Apply to Certain Generator Owners

The Commission stated that it agreed with commenters that Reliability Standard EOP-012-2 Requirement R7 "does not provide clear direction as to the required corrective action plan implementation timeline that applies to certain generator owners," particularly where a Generator Owner had combinations of both existing and new equipment for freeze protection measures in its Corrective Action Plan. Therefore, the Commission directed NERC to clarify this aspect of the standard.[71]

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69 *Id.* at P 72.

70 *Id.* at P 72.

71 *Id.* at P 76.

7. Address the Concern that Generator Cold Weather Constraint Declarations Should be Reviewed More Frequently than Once Every Five Years to Ensure the Constraint Remains Valid

The Commission stated that, while it acknowledged the administrative burden of more frequent reviews of Generator Cold Weather Constraint declarations, it agreed with commenters that a five-year review periodicity "could delay the identification and adoption of new freeze protection measures and does not represent the current pace of technological advancements."[72] The Commission therefore directed NERC to revise Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraints to ensure the constraint remains valid.[73]

V. JUSTIFICATION FOR APPROVAL

In this petition, NERC submits for Commission approval proposed Reliability Standard EOP-012-3 – Extreme Cold Weather Preparedness and Operations as well as one revised defined term used in the proposed standard: Generator Cold Weather Constraint. The purpose of proposed Reliability Standard EOP-012-3 remains the same as approved Reliability Standard EOP-012-2: "to address the effects of operating in extreme cold weather by ensuring each Generator Owner has developed and implemented plan(s) to mitigate the reliability impacts of extreme cold weather on its applicable generating units." The proposed Reliability Standard would continue to apply to Generator Owners and Generator Operators that own or operate BES generating units, with freeze protection requirements that apply to those BES generating units that are expected to operate in freezing temperatures. The proposed Reliability Standard contains nine requirements and one attachment. Proposed Requirements R1 through R8 are carried forward from Reliability Standard EOP-012-2 with revisions necessary to address the Commission directives and provide additional

72 *Id.* at P 94.

73 *Id.*

clarifications. Proposed Requirement R9 and Attachment 1 are new in proposed Reliability Standard EOP-012-3.

Proposed Reliability Standard EOP-012-3 improves upon Reliability Standard EOP-012-2 through additional revisions intended to improve the clarity and effectiveness of the standard. Consistent with the Commission's directives in the June 2024 Order, proposed Reliability Standard EOP-012-3 would ensure that entities are implementing corrective actions to address known issues affecting their ability to operate reliably in cold weather in a timely manner. For those circumstances in which implementing corrective actions may not be feasible, referred to in the proposed standard as "Generator Cold Weather Constraints," proposed Reliability Standard EOP-012-3 would provide an improved framework for the identification, validation, and periodic review of such constraints. Consistent with the June 2024 Order, this framework provides clear, detailed, and objective criteria for identifying Generator Cold Weather Constraints. These clarifications and improvements contribute to a clearer and stronger standard for generator cold weather preparedness that would help advance the reliability of the Bulk-Power System during future cold weather seasons.

The revisions in proposed Reliability Standard EOP-012-3 and the revised definition of Generator Cold Weather Constraint are discussed more fully below. Additional discussion of the technical basis for the original requirements in the EOP-012 Reliability Standard, which are clarified and expanded upon in proposed Reliability Standard EOP-012-3, is available in NERC's petition for approval of Reliability Standards EOP-011-3 and EOP-012-1[74] and NERC's petition for approval of Reliability Standard EOP-012-2.[75]

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74 *See* EOP-011-3/EOP-012-1 Petition, *supra* note 37.

75 *See* EOP-012-2 Petition, *supra* note 50.

NERC developed proposed Reliability Standard EOP-012-2 through Project 2024-03 Revisions to EOP-012-2. The proposed Reliability Standard was developed in an open and fair manner and in accordance with the Commission-approved development process for Reliability Standards, a process which included several public comment periods. In accordance with Section 321 of the NERC Rules of Procedure, Special Rule to Address Certain Regulatory and Board of Trustees Directives, the NERC Board of Trustees approved proposed Reliability Standard EOP-012-3 on April 4, 2025.[76] The summary of development and complete record of development for proposed Reliability Standard EOP-012-3 is attached to this petition as **Exhibit H**. This exhibit includes a consideration of each of the comments submitted during the Rule 321.5 public comment period and how they were addressed, or not addressed, in the final proposed Reliability Standard EOP-012-3.

As discussed in **Exhibits E and F**, and for the reasons stated below, proposed Reliability Standard EOP-012-3 addresses the Commission's directives from the June 2024 Order, meets the Commission's criteria for approval in Order No. 672, and is just, reasonable, not unduly discriminatory, and in the public interest. NERC respectfully requests that the Commission approve proposed Reliability Standard EOP-012-3 and the revised definition of Generator Cold Weather Constraint, to become effective in accordance with the proposed implementation plan discussed in Section VI.

[76] In approving the proposed standard under Section 321.5 of the NERC Rules of Procedure, the NERC Board of Trustees found that the proposed standard was just, reasonable, not unduly discriminatory or preferential, and in the public interest. In making this determination, the Board considered the development record, the factors identified in Section 321.5 of the NERC Rules of Procedure, and the Reliability Standards approval criteria identified by the Commission in Order No. 672.

A. Revised Definition for Inclusion in the NERC *Glossary*: Generator Cold Weather Constraint

NERC proposes a revised definition of the term Generator Cold Weather Constraint used in proposed Reliability Standard EOP-012-3 for inclusion in the NERC *Glossary*. Under the EOP-012 standard, a Generator Owner may decline to implement one or more actions in a Corrective Action Plan to address freeze protection issues on existing equipment or decline to implement freeze protection measures on new generating facilities if certain constraints on implementation are present. Reliability Standard EOP-012-1 originally referred to these constraints as "technical, operational, or commercial constraints." Reliability Standard EOP-012-2 replaced this phrase with a defined term, "Generator Cold Weather Constraints," to address the concerns raised by the Commission in the February 2023 Order that the original language lacked clear and auditable criteria for compliance.[77] In considering this defined term and the application of Generator Cold Weather Constraints generally, the Commission directed further changes in the February 2024 Order.

Reliability Standard EOP-012-3 further defines these constraints in new Attachment 1 to provide more meaningful, measurable criteria for implementation consistent with the intent of the drafting team developing prior versions of the standard. As such, NERC proposes to define Generator Cold Weather Constraint more generally, as follows:

> **Generator Cold Weather Constraint** – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components ~~using the criteria below~~. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include ~~acceptable~~ practices, methods, or technologies ~~generally~~ ~~implemented by the electric industry in areas that experience similar winter climate conditions~~

[77] *See* February 2023 Order at P 64-65.

that would be expected to result in improved generating unit performance during cold temperatures.

~~Criteria used to determine a constraint include practices, methods, or technologies which, given the exercise of reasonable judgment in light of the facts known at the time the decision to declare the constraint was made:~~

- ~~Were not broadly implemented at generating units for comparable unit types in regions that experience similar winter climate conditions to provide reasonable assurance of efficacy;~~
- ~~Could not have been expected to accomplish the desired result; or~~
- ~~Could not have been implemented at a reasonable cost consistent with good business practices, reliability, or safety. A cost may be deemed "unreasonable" when implementation of selected freeze protection measure(s) are uneconomical to the extent that they would require prohibitively expensive modifications or significant expenditures on equipment with minimal remaining life.~~

Consistent with the June 2024 Order, the proposed definition removes references to "cost," "reasonable cost," "unreasonable cost," and "good business practices."[78] The proposed revised definition of Generator Cold Weather Constraint is discussed in further detail in the contexts of Requirement R8, Attachment 1, and Requirement R9, in Sections V.I and V.J, below.

B. Requirement R1: Identifying Generator Cold Weather Data and Information

Proposed Reliability Standard EOP-012-3 would improve upon Reliability Standard EOP-012-2 by clarifying Requirement R1 as it relates to the calculation of the Extreme Cold Weather Temperature (or "ECWT") for an applicable generating unit. The Extreme Cold Weather Temperature is defined as "The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 01/01/2000 through the date the

[78] *See* June 2024 Order at P 47 ("Further, as part of the directive to develop and submit modifications to the Generator Cold Weather Constraint definition of proposed Reliability Standard EOP-012-2, we direct NERC, pursuant to section 215(d)(5) of the FPA, to remove the references to 'cost,' 'reasonable cost,' 'unreasonable cost,' and 'good business practices' and replace them with criteria that are objective, unambiguous, and auditable.")

temperature is calculated." The Extreme Cold Weather Temperature forms the foundation for much of the required performance under the EOP-012 standard. While the Commission did not direct further changes to this aspect of the standard in the June 2024 Order, commenters raised concerns regarding how missing hourly values should be addressed in the calculation of the Extreme Cold Weather Temperature during the standard development process for Reliability Standard EOP-012-3. To address these concerns, proposed Reliability Standard EOP-012-3 revises Requirement R1 to provide additional clarification regarding the treatment of missing or invalid hourly temperature data.

Proposed Requirement R1 is revised as follows:

R1. At least once every five calendar years, each Generator Owner shall, for each of its applicable generating unit(s):

1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable generating unit(s) and identify the calculation date, ~~and~~ source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, if necessary; and

1.1.1. If the ~~re-calculated~~ recalculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation~~. If~~ and if new corrective actions are needed to provide the required operational capability ~~under~~ described in Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) calendar months of the recalculation.

1.2. Identify generating unit(s) cold weather data, to include:

1.2.1. Generating unit(s) operating limitations in cold weather to include

1.2.1.1. Capability and availability;

1.2.1.2. Fuel supply and inventory concerns;

1.2.1.3. Start-up issues;

1.2.1.4. Fuel switching capabilities; and

1.2.1.5. Environmental constraints.

1.2.2. Generating unit(s) minimum:

> • Design temperature, and if available, the concurrent wind speed and precipitation;
>
> • Historical operating temperature at least one hour in duration, and if available, the concurrent wind speed and precipitation; or
>
> • Current cold weather performance temperature determined by an engineering analysis, which includes the concurrent wind speed and precipitation.

In developing earlier versions of the EOP-012 standard, the original EOP-012 drafting team identified that there may be gaps in hourly data available from single weather stations, and that entities may need to consider data from multiple stations or use alternative measures to calculate the Extreme Cold Weather Temperature.[79] In developing proposed Reliability Standard EOP-012-3, the drafting team considered comments suggesting that entities must account for every gap in order to remain compliant with the standard as currently written, even where a statistical analysis would show that the missing values had no effect on the resulting calculated Extreme Cold Weather Temperature.[80] Based on a statistical analysis, the drafting team considered that a significant number of hourly values could be missing from a cold weather data set with no impact on the final calculated Extreme Cold Weather Temperature, assuming a random distribution of missing values in the data set. However, if the data set were missing hourly values on the coldest days, a fewer number of gaps could impact the final calculated Extreme Cold Weather

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79 *See* EOP-012-2 Petition, *supra* note 50, Exhibit C (Technical Rationale) at 1.

80 *See* Exhibit H Complete Record of Development at item 20, December 3, 2024 Consideration of Comments at 285 (North American Generator Forum comments: "While the SDT has significantly modified the document related to calculating the ECWT, and while the NAGF supports these modifications, nothing in this document addresses the unreasonable position that some regions are taking to require a temperature reading for every hour in order to make an ECWT valid. In the vast majority of cases, the GO is not in a position to have over 54,000 data points for any location, let alone every location. The GO in most cases must gather data from third party providers, and none of the data is perfect. This issue must be addressed through either Requirement R1 or modification to the ECWT definition. The NAGF looks forward to working with the SDT to address this identified concern."). *See also* Exhibit H Complete Record of Development at item 41, January 27, 2025 Consideration of Comments at 190-191 (NAGF comments suggesting that the drafting team specify an "ECWT calculation is complete if the data source has greater than 90 percent of the expected data points and any gap greater than 168 hours is identified" and stating that the issue of missing hourly values in the ECWT calculation process "is an important issue for the NAGF membership."). In both comment periods, multiple commenters submitted comments in support of, or incorporating into their own comments, the NAGF comments.

Temperature if adjustments to address those gaps were not made.[81]

The proposed addition in Requirement R1 Part 1.1 would clarify that Generator Owners have flexibility to exercise judgment in how they address missing or invalid values in their data sets when calculating the Extreme Cold Weather Temperature. This flexibility is important, as weather data sets spanning many years are likely to contain gaps in hourly values, but not all gaps in hourly values would result in a change to the final Extreme Cold Weather Temperature calculation and thus the temperature to which the generating unit must have the capability to perform. Any data set with missing or invalid hourly temperature values recorded during the coldest periods since January 1, 2000 should be carefully evaluated to ensure that any adjustments used for those values are properly addressed in a transparent and logical way. Generator Owners would be expected to document how they accounted for any gaps in weather data, and this documentation would be reviewed during compliance monitoring activities.

NERC believes that this modest, clarifying revision will substantially address the stakeholder concerns raised during the standard development process for proposed Reliability Standard EOP-012-3 regarding the calculation of the Extreme Cold Weather Temperature. Nevertheless, because the Extreme Cold Weather Temperature calculation is foundational to the EOP-012 standard, and NERC understands that concerns may remain about how this requirement will be audited and enforced, NERC has proposed a compliance abeyance period for this requirement. Through this compliance abeyance period, NERC would monitor the implementation of this requirement and identify, to the extent necessary, any revisions to the Extreme Cold Weather Temperature formula or Requirement R1 Part 1.1 that may further improve how entities ensure reliable operations during extreme cold weather conditions. Please see Section VII for

[81] *See* Technical Rationale, Exhibit D at 3.

further discussion of this proposal.

C. Requirement R2: Implementing Freeze Protection Measures for New BES Generating Units

Proposed Reliability Standard EOP-012-3 Requirement R2 revises the cold weather operational capability requirements for new BES generating units to remove the option to develop a Corrective Action Plan to address operational capability issues. Proposed Reliability Standard EOP-012-3 Requirement R2 would revise the currently approved version as follows:

R2. Applicable to generating units ~~with a~~ that begin commercial operation[1] ~~date~~ on or after October 1, 2027[2]: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[1] shall:

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or

- ~~Develop a Corrective Action Plan(s) to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours.~~

- Document, in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

Footnotes:

[fn1] Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing.

[fn2] In non-U.S. jurisdictions, this will be the date established by the Applicable Governmental Authority.

[fn1~~3~~] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

Proposed Reliability Standard EOP-012-3 carries forward the framework of previous versions of the EOP-012 standard which would require new BES generating units to meet more stringent requirements than existing BES generating units. This difference is due to the difficulty of performing the same level of design analysis on existing generation as on new generation, the high threshold of the ECWT, and the expected availability of historical data to support sustained operations at the Extreme Cold Weather Temperature.[82]

In the June 2024 Order, the Commission directed NERC to modify EOP-012-2 to address Corrective Action Plans for new generating units. The Commission stated that, while it was persuaded by NERC's rationale that there needs to be allowances made for units that are well into their construction phase to complete Corrective Action Plans for elements already designed, it was concerned that Reliability Standard EOP-012-2 did not clearly differentiate between projects in an advanced stage of construction and those in a lesser phase of construction.[83] The Commission found that "generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation." Based on this finding, the Commission directed NERC to revise the EOP-012 standard "to clarify that any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date."

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[82] The technical basis for the original requirements is discussed in detail in NERC's petition for approval of proposed Reliability Standards EOP-011-3 and EOP-012-1. *See* EOP-011-3/EOP-012-1 Petition, *supra* note 37 at 33-37.

[83] June 2024 Order at P 72.

To address this directive, proposed Reliability Standard EOP-012-3 would revise Requirement R2 to provide that new generating units entering commercial operation on or after October 1, 2027 would either need to: (1) meet the more stringent freeze protection measures called for new generation; or (2) declare a Generator Cold Weather Constraint that prevents them from doing so in accordance with Requirement R8. As concerns were raised during the development process about requiring Generator Owners to take actions under Reliability Standards prior to being registered with NERC for mandatory compliance purposes, proposed Requirement R2 would not require Generator Owners to develop or complete Corrective Action Plans ahead of entering commercial operation. However, the practical effect is the same: unless a Generator Cold Weather Constraint would apply, the Generator Owner shall either complete any corrective measures that are needed for its new BES generating unit prior to the commercial operation date or it must delay the commercial operation date until those corrective measures are completed. Proposed Requirement R2 is therefore consistent with the Commission's June 2024 Order paragraph 72 directive and more closely resembles the original Reliability Standard EOP-012-1 requirements for new generating units. New footnote 1 clarifies what is meant by the phrase "commercial operation." New footnote 2 recognizes that, in non-U.S. jurisdictions, the Applicable Governmental Authority may have established a date other than October 1, 2027 for determining which units would be considered "new" and therefore subject to the more stringent requirements of Requirement R2.

In addition to the revisions to address the June 2024 Order directive described above, NERC proposes additional revisions to improve the readability of the requirement and add metric measurements, consistent with NERC's Metric Policy for Reliability Standards.[84]

[84] *See* NERC Rules of Procedure Appendix 3A, NERC Standard Processes Manual, at Section 1.4 (Attributes of NERC's Reliability Standards Process, Metric Policy).

D. Requirement R3: Implementing Freeze Protection Measures for Existing BES Generating Units

Proposed Requirement R3 proposes non-substantive revisions in Requirement R3, as follows:

> **R3**. Applicable to generating unit(s) in commercial operation prior to October 1, 2027[fn4]: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),~~2~~5 shall:
>
> - Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature; or
> - Develop a Corrective Action Plan to add new or modify existing freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature.
>
> [fn4] In non-U.S. jurisdictions, this will be the date established by the Applicable Governmental Authority.
>
> [fn~~2~~5] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

Consistent with revisions made throughout the proposed standard, the word "generating" is added before the word "unit(s)" in each instance for clarity and consistency. Additionally, NERC proposes to repeat the same footnote included in Requirement R2 regarding the appropriate date for non-U.S. jurisdictions.

E. Requirement R4: Implementing and Maintaining Cold Weather Preparedness Plans

Proposed Reliability Standard EOP-012-2 Requirement R4 includes several stylistic and clarifying revisions, as follows:

> **R4.** Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness plan(s) shall include the following, at a minimum:

4.1 The lowest calculated Extreme Cold Weather Temperature for each generating unit, as determined in Requirement R1[~~3~~6];

4.2 The generating unit cold weather data, as determined in Requirement ~~R1.2~~ R1, Part 1.2;

4.3 Documentation identifying ~~the~~ Generator Cold Weather Critical Components;

4.4 Documentation of freeze protection measures implemented on Generator Cold Weather Critical Components ~~which~~ that includes measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain); ~~and~~

4.5 Annual inspection and maintenance of generating unit(s) freeze protection measures implemented on Generator Cold Weather Critical Components.

[fn~~3~~6] Generator Owners shall include the lowest calculated Extreme Cold Weather Temperature for the unit, even where subsequent periodic re-calculations under Requirement R1 Part 1.1 cause an increase in the Extreme Cold Weather Temperature.

In addition to the stylistic revisions shown above, proposed Requirement R4 Part 4.5 would clarify the Generator Owner's obligation to ensure an annual inspection and maintenance of generating unit(s) freeze protection measures implemented on Generator Cold Weather Components. The addition of the phrase "implemented on Generator Cold Weather Components" clarifies the scope of annual inspection and maintenance required and is consistent with Requirement R4 Parts 4.3 and 4.4 which require identification of the Generator Cold Weather Critical Components and freeze protection measures implemented on those components in the cold weather preparedness plan.

F. Requirement R5: Providing Annual Training on Cold Weather Preparedness Plans

Proposed Reliability Standard EOP-012-3 Requirement R5 is an existing requirement that is carried forward substantively unchanged from Reliability Standard EOP-012-2. Minor revisions are proposed as follows:

R5. Each Generator Owner, in conjunction with its Generator Operator, shall identify the entity responsible for providing ~~the~~ generating unit-specific training, and that identified entity shall provide annual training to ~~its~~ the maintenance ~~or~~ and operations personnel, as applicable, responsible for implementing the cold weather preparedness plan(s) developed pursuant to Requirement R4.

The proposed revisions are intended to improve the readability and clarity of the requirement.

G. Requirement R6: Developing and Implementing Corrective Action Plans to Address Generator Cold Weather Reliability Events

Proposed Reliability Standard EOP-012-3 Requirement R6 would revise the requirement that each Generator Owner experiencing a Generator Cold Weather Reliability Event[85] develop a Corrective Action Plan to address the identified causes. Proposed Reliability Standard EOP-012-3 Requirement R6 would revise the currently approved requirement to address the directives from the June 2024 Order, as follows:

R6. Each Generator Owner shall, ~~for each~~ after experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),~~[4]~~[7] develop and implement[8] a Corrective Action Plan(s) ~~when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed within 150 days or by July 1, whichever is earlier, and contains at a minimum~~ to address identified freezing issues as follows:

6.1 The Generator Owner shall develop a Corrective Action Plan for the generating unit that experienced a Generator Cold Weather

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85 The NERC *Glossary* defines a Generator Cold Weather Reliability Event as follows:

One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

Reliability Event no later than prior to the first day of the first December following the Generator Cold Weather Reliability Event.[9]

6.2. The Generator Owner shall conduct a review of ~~applicability to similar equipment at~~ other generating unit(s) in its fleet with the same or similar equipment as the affected generating unit to determine if any of those generating unit(s) are susceptible to the identified freezing issues. If corrective actions are needed, the Generator Owner shall develop or update a Corrective Action Plan to address the other generating unit(s). This review and, if applicable, the development or update of any Corrective Action Plan(s), shall be completed no later than 12 calendar months following the Generator Cold Weather Reliability Event.

6.3. For each Corrective Action Plan, the Generator Owner shall include at a minimum:

~~**6.1.**~~ **6.3.1.** A summary of the identified cause(s) ~~for~~ of the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;

~~**6.2** A review of applicability to similar equipment at other generating units owned by the Generator Owner; and~~

6.3.2. A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures;

6.3.3 An identification of any operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until ~~execution~~ implementation of the corrective action(s) identified in the Corrective Action Plan is completed~~.~~;

6.3.4. A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required; and

6.3.5. A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows:

6.3.5.1. For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.[10]

6.3.5.2. For other generating unit(s) owned by the Generator Owner, within 24 calendar months of completing the review required in Part 6.2, or no later than 36 calendar months following the Generator Cold Weather Reliability Event.

6.4 If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval. The submitted Corrective Action Plan extension request shall include the following:

6.4.1. An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner;

6.4.2. Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and

6.4.3. Updated timetable for implementing the selected actions in Part 6.3.2.

6.5 The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, as applicable.

Footnotes

[fn47] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[fn8] If a Generator Owner has previously experienced a Generator Cold Weather Reliability Event and developed a Corrective Action Plan for the generating unit or units under Requirement R6 Parts 6.1 or 6.2, the Generator Owner may review and update its existing plan(s) in lieu of developing a new plan.

[fn9/fn10] For events that occur in September, October, or November, the timetable shall specify completion prior to December 1 of the following calendar year.

NERC proposes to revise Requirement R6 in proposed Reliability Standard EOP-012-3 to address all aspects of Corrective Action Plans developed in response to Generator Cold Weather Reliability Events. The NERC *Glossary* defines a "Corrective Action Plan" as a "list of actions and an associated timetable for implementation to remedy a specific problem." In Reliability

Standard EOP-012-2, Requirement R6 addresses the development of Corrective Action Plans following Generator Cold Weather Reliability Events, including the timetables for developing such plans and the required contents, while Requirement R7 addresses the implementation timeframe for all Corrective Action Plans. In proposed Reliability Standard EOP-012-3, Requirement R6 would consolidate these requirements and shorten the timelines for implementing Corrective Action Plans developed in response to Generator Cold Weather Reliability Events. Proposed Requirement R6 would address the Commission's directives in paragraphs 68 and 70 of the June 2024 Order relating to the implementation of Corrective Action Plans for Generator Cold Weather Reliability Events. Proposed Requirement R6 would also address in part the Commission's directive in paragraph 76 to address ambiguities in Corrective Action Plan implementation deadlines by specifying clearly the deadlines that apply for the implementation of corrective actions depending on whether the unit experienced the Generator Cold Weather Reliability Event or is another unit in the Generator Owner's fleet that was determined to be susceptible to the same freezing issue following a review.

To address paragraph 68 of the June 2024 Order, proposed Requirement R6 Part 6.1 and Part 6.3.5.1 would provide that a Generator Owner must develop and implement a Corrective Action Plan for a generating unit that experienced a Generator Cold Weather Reliability Event by no later than the first day of the first December following the event, or for an early season event, no later than the first day of the first December of the following calendar year. These revisions are responsive to the first part of the Commission's paragraph 68 directive, directing NERC "to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather

Reliability Event."[86] Further, these revisions are consistent with the Commission's suggestion that NERC require Generator Owners to implement corrective actions prior to the next winter season,[87] with December 1 representing the start of meteorological winter in North America. This timeline would allow Generator Owners to review multiple events holistically following a winter season and create one Corrective Action Plan for components with common failure causes. While the focus of proposed Requirement R6 is on the prompt remediation of known freezing issues, Requirement R6 Part 6.1 would specify that the Corrective Action Plan itself must be developed by no later than the implementation deadline to ensure that identified issues and the corrective actions taken to address them are memorialized.

Proposed Reliability Standard EOP-012-3 Requirement R6 Part 6.2 would carry forward the requirement from Reliability Standard EOP-012-2 for Generator Owners to conduct a review of other generating units in their fleets to determine if any of those units might be susceptible to the same freezing issues. To address concerns raised in the standard development process, this requirement is revised to provide additional clarification as to the extent of the review that is required. As the focus of Requirement R6 has shifted to the prompt remediation of freezing issues at generating units experiencing Generator Cold Weather Reliability Events, proposed Requirement R6 Part 6.2 would allow Generator Owners twelve calendar months (up from 150 days or by July 1 as in EOP-012-2) to complete their broader fleetwide reviews and develop or update Corrective Action Plans to address those other generating units as needed.

Proposed Requirement R6 Part 6.3 would specify the required contents of any Corrective Action Plan developed under Requirement R6. This section largely consolidates requirements

86 June 2024 Order at P 68.

87 *Id.*

presently in Reliability Standard EOP-012-2 Requirement R6 and R7 to create one requirement part addressing the content of Corrective Action Plans developed in response to Generator Cold Weather Reliability Events. Requirement R6 Part 6.3.1 would continue to require Generator Owners to include a summary of the identified causes of the event. Requirement R6 Part 6.3.2 would require the Generator Owner to identify the corrective actions. Requirement R6 Part 6.3.3 would require the Generator Owner to update any operating limitations or impacts to its cold weather preparedness plan that would apply until the Corrective Action Plan is implemented. Requirement R6 Part 6.3.4 would require the Generator Owner to update its cold weather preparedness plan as needed.

Proposed Requirement R6 Part 6.3.5 is a new requirement part that would establish clear timelines for the implementation of Corrective Action Plans for Generator Cold Weather Reliability Events consistent with paragraph 68 of the June 2024 Order. As noted previously, Generator Owners would be required to implement corrective actions for the generating unit experiencing the Generator Cold Weather Reliability Event prior to the start of the next winter season (Requirement R6 Part 6.3.5.1). This timeline is consistent with the Commission's suggested timeline in the June 2024 Order. For Corrective Action Plans addressing other generating units in a Generator Owner's fleet that may be susceptible to freezing issues, the Generator Owner would be required to implement corrective actions within 24 calendar months of the review required in Requirement R6 Part 6.2, or no later than 36 calendar months following the Generator Cold Weather Reliability Event (Requirement R6 Part 6.3.5.2).

In establishing the timeline provided in proposed Requirement R6 Part 6.3.5.2, NERC considered the Commission's suggestion in the June 2024 Order that the standard require Generator Owners "to complete freeze protection measures on similar equipment on all of its fleet

within 24 months of becoming aware of the freeze issue," with a "staggered 48-month corrective action plan implementation deadline" for "larger or more complicated implementations."[88] NERC also considered multiple stakeholder comments suggesting a 24 month timeframe to both complete a review and implement corrective actions may not be sufficient.[89] It was determined that developing specific requirements for staggering implementation of corrective actions across a fleet would present logistical challenges, as it is difficult to define with specificity the circumstances that would constitute a "larger or more complicated implementation" while ensuring fair and even application across Generator Owners with varying fleets. Further, a requirement to stagger implementation may not promote an orderly and efficient implementation of corrective actions depending on the issue needing to be addressed.[90] Following consideration of these factors, proposed Requirement R6 Part 6.3.5.2 would provide a uniform timeframe of 36 calendar months. Generator Owners that complete their fleet-wide reviews sooner than the 12 calendar months allowed in Requirement R6 Part 6.2 would have a longer period to implement any required corrective actions, thus incentivizing prompt action to identify the extent of condition across a fleet. NERC expects that this reasonably expeditious timeline would accommodate most circumstances; however, if a particularly complex implementation issue arises that cannot be addressed in 36 calendar months, the Generator Owner may request an extension under proposed Requirement R6 Part 6.4.

Proposed Requirement R6 Part 6.4 is a new requirement part addressing the Commission's directive in paragraph 70 of the June 2024 Order "to ensure that any extension of a corrective

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88 June 2024 Order at P 68.

89 *See* Exhibit H Complete Record of Development at item 20 (December 3, 2024 Consideration of Comments) at 69-70 (expressing concern with the proposed timelines in draft 1 of the standard).

90 *See* EOP-012-2 Petition, *supra* note 50, at 67-68 (discussing considerations that precluded use of staggered implementation in Reliability Standard EOP-012-2).

action plan implementation deadline beyond the maximum implementation timeframe…is approved by NERC." Whereas Reliability Standard EOP-012-2 would allow a Generator Owner to update a Corrective Action Plan if timetables would exceed the timelines specified in the standard (Requirement R7 Part 7.3), proposed Reliability Standard EOP-012-3 would require the Generator Owner to seek approval by the Compliance Enforcement Authority (or "CEA") for any extensions needed to implement corrective actions due to circumstances beyond its control. Proposed Reliability Standard Requirement R6 Part 6.4 is similar to approved requirements in Reliability Standard TPL-007-4 requiring entities to seek Compliance Enforcement Authority approval for extensions to implement corrective actions to address issues identified through Geomagnetic Disturbance Vulnerability Assessments.[91] As part of any request, the Generator Owner must include: (1) an explanation of the circumstances causing the delay and why those circumstances are beyond its control; (2) revisions to selected corrective actions, including any use of operating procedures; and (3) an updated timetable for completion.

The Compliance Enforcement Authority, typically a Regional Entity, would review the extension request in accordance with the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process maintained by the NERC Compliance Monitoring and Enforcement Program.[92] This process would provide for the timely review of Corrective Action Plan extension requests and describes examples of circumstances that may be beyond the control of the entity, including delays resulting from regulatory or legal processes, delays resulting from stakeholder processes required by tariff, delays resulting from equipment lead times, or delays from unit outages being denied. The process also describes how the entity's due diligence in taking steps to implement

[91] *See* Reliability Standard TPL-007-4 Requirement R7 Part 7.4 and Requirement R11 Part 11.4.

[92] The draft EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process is included as Exhibit C to this filing.

corrective actions will be considered as part of this determination. By limiting Corrective Action Plan extensions to circumstances beyond the control of the Generator Owner and requiring Compliance Enforcement Authority review and approval for any extension request, proposed Reliability Standard EOP-012-3 would provide for appropriate oversight of Corrective Action Plan extensions and help ensure that known reliability risks are addressed in a prompt manner and without undue delay.

Proposed Reliability Standard EOP-012-3 Requirement R6 Part 6.5 would address the declaration of Generator Cold Weather Constraints, where such constraints would preclude the implementation of one or more corrective actions in Corrective Action Plans to address issues related to Generator Cold Weather Reliability Events. This provision was previously applicable to all EOP-012 Corrective Action Plans in Reliability Standard EOP-012-2 Requirement R7 Part 7.4; it is carried forward with streamlining revisions in proposed Requirement R6 to create a complete and self-contained requirement addressing Corrective Action Plans for Generator Cold Weather Reliability Events. Please see the discussion of proposed Requirement R8 in Section V.I below for additional information regarding requirements for the declaration and Compliance Enforcement Authority validation of Generator Cold Weather Constraints.

In developing proposed Reliability Standard EOP-012-3 Requirement R6, NERC considered the Commission's statement in paragraph 3 of the June 2024 Order summarizing its directives, which directed NERC to "to ensure that the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of [a Corrective Action Plan] extension."[93] Proposed Requirement R6 Part 6.3.3 would continue to require a Generator Owner to identify any operating limitations that would apply until it completes its Corrective

[93] *See* June 2024 Order at P 3 (summarizing directives).

Action Plan. The TOP-003 and IRO-010 Reliability Standards require the Transmission Operator, Balancing Authority, and Reliability Coordinator to maintain data specifications for their Real-time and operational planning analyses that include provisions for notification of BES generating unit(s) status during local forecasted cold weather to include operating limitations based on capability and availability, among other factors. These standards require the Generator Owner to provide the requested data. Additionally, other mechanisms that reliability entities have for obtaining up-to-date information on the status and availability of generators was discussed during the standard development process. It was also considered that, under Reliability Standard TOP-002-5 Requirement R8, each Balancing Authority is required to have an extreme cold weather Operating Process that takes into consideration capability and availability concerns, considering generating operating limitations from previous cold weather periods. After considering these standards, it was determined that no additional requirement in proposed Reliability Standard EOP-012-3 would be needed to ensure the "generator owner informs relevant registered entities of operating limitations in extreme cold weather" specifically during the period of Corrective Action Plan extension. Operating limitations should be communicated through other mechanisms regardless of whether those operating limitations apply generally, during the period provided in the Corrective Action Plan for implementation, or the period provided authorized by the Compliance Enforcement Authority for an extension. To the extent a Transmission Operator, Balancing Authority, or Reliability Coordinator would find it useful to understand whether the operating limitations apply specifically during a Corrective Action Plan extension, it may request this information as part of its data specifications, and the Generator Owner would be required to provide it. However, a requirement in proposed Reliability Standard EOP-012-3 for the Generator

Owner to provide this information through a separate mechanism, absent a communicated need from the reliability entity, would not provide any reliability benefit.

In conclusion, proposed Reliability Standard EOP-012-2 Requirement R6, with its clarified and consolidated requirements addressing all aspects of Corrective Action Plans to address Generator Cold Weather Reliability Events, represents a significant improvement over the corresponding requirements in Reliability Standard EOP-012-2 and addresses the Commission's directives in the June 2024 Order.

H. Requirement R7: Developing and Implementing Corrective Action Plans to Address Capability to Operate at the ECWT

Proposed Reliability Standard EOP-012-3 Requirement R7 would address the development of Corrective Action Plans to implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the ECWT under Requirement R3, or as needed to provide such capability after a periodic review of the Extreme Cold Weather Temperature (Requirement R1) or upon determining that a previously declared Generator Cold Weather Constraint is no longer valid (Requirement R9). As noted above, proposed Requirement R6 would address Corrective Action Plans to address Generator Cold Weather Reliability Events. Proposed Requirement R7 reflects several revisions to conform with the proposed revisions in Requirement R6, to address Commission directives from paragraphs 70 and 76 of the June 2024 Order, and to improve the readability of the requirement.

Proposed Reliability Standard EOP-012-3 would modify Reliability Standard EOP-012-2 Requirement R7 as follows:

> **R7.** Each Generator Owner~~, for each~~ that is required to develop a Corrective Action Plan ~~developed pursuant to~~ under Requirements R1, ~~R2,~~ R3, or ~~R6~~R9~~,~~ shall develop and implement the Corrective Action Plan in accordance with the following:

7.1 ~~Include a timetable for implementing the selected corrective action(s) that shall~~ For each Corrective Action Plan, the Generator Owner shall include at a minimum the following:

7.1.1. A ~~List~~ list of any ~~the~~ action~~(s)~~ ~~which address(es) existing equipment or~~ that require new freeze protection measures~~, if any, to be completed~~ with a timetable specifying completion of such measures within ~~24~~48 calendar months of completing development of the Corrective Action Plan;

7.1.2. A ~~List~~ list of any ~~the~~ action~~(s)~~ ~~which require(s) new equipment or~~ that remedy issues with existing freeze protection measures~~, if any, to be completed~~ with a timetable specifying completion of such measures within ~~48~~ 24 calendar months of completing development of the Corrective Action Plan (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures); and

7.1.3. ~~List the~~ A description of updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; and

7.1.4. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed.

~~**7.2**. Implement the Corrective Action Plan in accordance with the specified timetables in Requirement R7 Part 7.1;~~

~~**7.3** Update the Corrective Action Plan action(s) and timetable(s), with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and~~

7.2. If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R7 Part 7.1 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following:

7.2.1. An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.2.2. Revisions to the selected actions in Parts 7.1, if any, including utilization of operating procedures, if applicable; and

7.2.3. Updated timetable for implementing the selected actions in Part 7.1.

7.43 The Generator Owner shall ~~D~~document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint ~~that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan~~in accordance with Requirement R8.

Proposed Requirement R7 would revise the main requirement to reflect the updated applicability of this requirement, to exclude Corrective Action Plans addressed under proposed Requirement R6, and to improve readability.

Proposed Requirement R7 Part 7.1 would specify the minimum contents of a Corrective Action Plan. Consistent with paragraph 76 of the June 2024 Order, proposed Requirement R7 Parts 7.1.1 and Parts 7.1.2 would clarify the implementation timeline that would apply for implementing new freeze protection measures (48 months) and the implementation timeline that would apply for remedying issues with existing freeze protection measures (24 months). Proposed Requirement R7 Part 7.1.2 would further clarify that the shorter timeframe would apply for corrective actions to remedy issues with existing freeze protection measures, even if a Generator Owner is also implementing new freeze protection measures with a longer timeframe for implementation. While the terms "new" and "existing" are intended to be read with their commonly understood meanings, the Technical Rationale for proposed Reliability Standard EOP-012-3 further elaborates on the distinction between "new" and "existing" measures for the purposes of applying these implementation timeframes. For example, if a freeze protection measure such as heat trace fails, and the corrective action would be to replace the freeze protection measure with the same, a similar, or another commonly used technology, that would be considered an action to remedy an issue with an existing freeze protection measure and subject to the shorter, 24-month timeframe.

Similarly, changing a heat trace from 40 feet to 60 feet, or making a change in the amperage capability of the heat trace, would be considered actions to remedy issues with existing freeze protection measures. New freeze protection measures may include, among other things, the construction of permanent structures not existing before or the addition of technologies that are not already present.[94] The proposed revisions and supporting Technical Rationale thus provide clear direction as to the required Corrective Action Plan implementation deadlines as directed by the Commission in paragraph 76 of the June 2024 Order.

Proposed Requirement R7 Part 7.1.3 would continue to provide that Generator Owners make the appropriate updates to their cold weather preparedness plans as part of developing and implementing Corrective Action Plans.

Proposed Requirement R7 Part 7.1.4 is a new requirement part that would require the Generator Owner to identify any operating limitations on the generating unit(s) or impacts to the cold weather preparedness plan that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed. This requirement is currently included in Reliability Standard EOP-012-2 Requirement R6 only for Corrective Action Plans developed in response to Generator Cold Weather Reliability Events. Adding this requirement to Requirement R7 would reinforce that Generator Owners must have generator cold weather operating parameters and cold weather preparedness plans that reflect the current state of the generating unit to facilitate the accurate exchange of generator cold weather data with reliability entities where required under other Reliability Standards.[95]

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[94] See Technical Rationale, Exhibit D at 21.

[95] *See* discussion in Section V.G *supra* of how data regarding generator capability and availability in cold weather is addressed in other Reliability Standards.

Consistent with paragraph 70 of the June 2024 Order, proposed Requirement R7 Part 7.2 specifies that if a Generator Owner determines it would be unable to complete one or more actions in its Corrective Action Plan in accordance with the timetables specified in Requirement R7 Part 7.1, it must submit a Corrective Action Plan extension request to the Compliance Enforcement Authority for approval. Proposed Requirement R7 Part 7.2 is nearly identical to proposed Requirement R6 Part 6.2, which is discussed in detail in the preceding section. The process by which the Compliance Enforcement Authority would review Corrective Action Plan extension requests would be the same regardless of whether the request is submitted under proposed Requirement R6 or proposed Requirement R7.

Proposed Requirement R7 Part 7.3 would address the declaration of Generator Cold Weather Constraints, where such constraints would preclude the implementation of one or more corrective actions in a Corrective Action Plan. This provision is carried forward from Reliability Standard EOP-012-2 Requirement R7 Part 7.4 with streamlining revisions. Please see the discussion of proposed Requirement R8 in Section V.I below for additional information regarding requirements for the declaration and Compliance Enforcement Authority review of Generator Cold Weather Constraints.

For these reasons, proposed Reliability Standard EOP-012-2 Requirement R7 would represent a significant improvement upon the corresponding requirement for Corrective Action Plans in the approved Reliability Standard EOP-012-2 and address the relevant Commission directives from the June 2024 Order.

I. Requirement R8 and Attachment 1: Declaring Generator Cold Weather Constraints

Proposed Reliability Standard EOP-012-3 reflects a series of revisions to address the Commission's directives in the June 2024 Order regarding Generator Cold Weather Constraints;

specifically, to address ambiguities regarding the defined term Generator Cold Weather Constraint and the associated criteria[96] and to address concerns regarding the need for a timely review and evaluation of declared Generator Cold Weather Constraints by NERC.[97] These revisions consist of: (1) a revised definition of the term Generator Cold Weather Constraint; (2) a new Attachment 1 addressing the identification of Generator Cold Weather Constraints; and (3) a revised Requirement R8 providing a framework for ERO oversight of declared Generator Cold Weather Constraints.

As noted above, NERC proposes a revised definition of the term Generator Cold Weather Constraint to reflect this revised framework as follows:

> **Generator Cold Weather Constraint** – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components ~~using the criteria below~~. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include ~~acceptable~~ practices, methods, or technologies ~~generally implemented by the electric industry in areas that experience similar winter climate conditions~~ that would be expected to result in improved generating unit performance during cold temperatures.
>
> ~~Criteria used to determine a constraint include practices, methods, or technologies which, given the exercise of reasonable judgment in light of the facts known at the time the decision to declare the constraint was made:~~
>
> - ~~Were not broadly implemented at generating units for comparable unit types in regions that experience similar winter climate conditions to provide reasonable assurance of efficacy;~~
> - ~~Could not have been expected to accomplish the desired result; or~~
> - ~~Could not have been implemented at a reasonable cost consistent with good business practices, reliability, or safety. A cost may be deemed "unreasonable" when implementation of selected freeze protection measure(s)~~

96 See June 2024 Order at P 47.

97 *Id.* at P 54.

~~are uneconomical to the extent that they would require prohibitively expensive modifications or significant expenditures on equipment with minimal remaining life.~~

Proposed Attachment 1 would address the identification of Generator Cold Weather Constraints. In the June 2024 Order, the Commission directed NERC "to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective *and* sufficiently detailed so that applicable entities understand what is required of them."[98] Proposed Reliability Standard EOP-012-3 would address this directive and improve upon prior versions of the standard by expressly defining the types of circumstances that would qualify as Generator Cold Weather Constraints. In Reliability Standard EOP-012-1, these circumstances were identified more generally as "technical, commercial, or operational constraints." In Reliability Standard EOP-012-2, Generator Cold Weather Constraints are identified more specifically as circumstances calling for solutions that are not in widespread use, not thought to be effective, or could not be implemented at a reasonable cost consistent with good business practices, reliability, or safety. Proposed Reliability Standard EOP-012-3 replaces these concepts with a defined list. As such, the proposed standard provides objective and sufficiently detailed criteria so that applicable entities may understand what is required of them.

In the June 2024 Order, the Commission identified several potential approaches for addressing its directive, such as including a "limited and discrete set of circumstances that would qualify as acceptable constraints" or "establish[ing] a pre-approval process for all Generator Cold Weather Constraint declarations."[99] Proposed Attachment 1 would address the Commission's directive through a hybrid approach that would both define the circumstances that would constitute

98 June 2024 Order at P 47.

99 *Id.*

a Generator Cold Weather Constraint and the circumstances which could constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. These two categories are referred to as "Known Generator Cold Weather Constraints" and "Case-by-case Determinations of Generator Cold Weather Constraints," respectively. Using as a starting point the Technical Rationale for Reliability Standard EOP-012-2,[100] proposed Attachment 1 would build upon and define with specificity what circumstances may constitute valid Generator Cold Weather Constraints. In all instances, the Compliance Enforcement Authority would be responsible for reviewing the Generator Cold Weather Constraint to confirm its validity.

In proposed Attachment 1, Known Generator Cold Weather Constraints would consist of the following circumstances:

- Individual wind turbine towers manufactured prior to October 1, 2029 that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1 for generating units that began commercial operation prior to October 1, 2031.
- Application of freeze protection measures to meet the requirements of this Standard that require:
    - Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities;
    - Removal of accumulated frozen precipitation on solar panels;
    - Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters; or
    - Implementation of heat tracing or other de-icing technologies for wind turbine blades, that, through analysis, have been shown to not be effective or not made available by the OEM for generating units of a comparable types in regions that experience similar winter climate conditions.

[100] EOP-012-2 Petition, *supra* note 50, Exhibit C, Technical Rationale, at 4-5.

As discussed in the Technical Rationale, the development of the Known Generator Cold Weather Constraints list was informed by stakeholder input provided throughout the development process, including a technical conference convened in November 2024 for this purpose.

The first category reflects limitations in the low temperature operability of wind turbine towers, with broad recognition that the EOP-012 standard should recognize and permit this limitation for existing wind turbine tower equipment. However, it was also determined that this limitation should not serve as the basis for a Generator Cold Weather Constraint indefinitely, and that wind turbine towers must be designed and constructed to meet all aspects of Reliability Standard EOP-012-3 to assure the reliability of the Bulk-Power System in the future. After consideration of the feedback from the technical conference indicating that generational technological development cycles in the industry are on the order of five to seven years, NERC determined that, for this Generator Cold Weather Constraint to apply, the wind turbine towers must have been manufactured prior to October 1, 2029 and must have been installed and entered commercial operation prior to October 1, 2031. The October 1, 2029 manufacture date would allow four years beyond the anticipated implementation date of proposed Reliability Standard EOP-012-3 (October 1, 2025) for manufacturers to select, apply, test, and begin production of wind turbine towers constructed of materials capable of lower temperature operation appropriate for those locations with Extreme Cold Weather Temperatures below the limits associated with current tower material designs. Industry participants provided feedback indicating that delivery and construction lead times for wind turbines were years into the future, providing additional support for the selected date. The October 1, 2031 commercial operation date was established to provide a reasonable timeframe for entities to receive, construct, and commission the equipment, while eliminating any potential incentive to stockpile older equipment for later installation.

The second category of Known Generator Cold Weather Constraints consists of circumstances requiring the application of freeze protection measures that have, throughout the development history of the EOP-012 standard, been determined to be impractical to implement, are not likely to provide desired operational capability, or would represent an undue burden on Generator Owners to implement. This includes freeze protection measures that would call for replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities, measures that would call for the removal of accumulated frozen participation on solar panels (which could reduce the unit's capability or require the entity to station personnel at the site to manually remove participation as it accumulates), measures that would call for applying heat upstream of inlet air filters to prevent buildup of frozen precipitation on combustion turbine inlet air filters, or measures that would call for implementation of heat tracing or other de-icing technologies for wind turbine blades that, through analysis, have shown to not be effective or not made available by the original equipment manufacturer generating units of comparable types operating in comparable conditions.

While the two categories of Known Cold Weather Constraints would address many of the considerations raised throughout the development of the EOP-012 standard, it was recognized that other situations may, depending on the facts and circumstances, reasonably preclude the implementation of corrective actions on a specific generating unit. Proposed Attachment 1 therefore contains a non-exhaustive list of possible situations that may constitute a Generator Cold Weather Constraint, which would be evaluated on a case-by-case basis. These situations may include the following:

1. The implementation of a specific freeze protection measure will void an equipment warranty.
2. The implementation of a specific freeze protection measure would exceed a manufacturer's design limitation and the exceedance is expected to functionally impair or degrade the

effective operation of the impacted component or system.

3. The implementation of a specific freeze protection measure is precluded by technical or physical limitations. For example:
    a. Installing wind breaks around a cooling tower or air-cooled heat exchanger that requires free airflow for its functionality;
    b. Implementing freeze protection measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system;
    c. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.
4. A determination, through an analysis, that the freeze protection measure would not be effective for the generating unit. Such a determination may be supported, for example, by fleet or industry operating experience (or lack thereof) with the freeze protection measure on generating unit(s) of comparable types in regions that experience similar winter climate conditions.
5. A determination, through an analysis, that the implementation of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:
    a. The implementation of freeze protection measures, while feasible, would result in the accelerated premature retirement of an existing generating unit with no acceptable replacement available within the accelerated timeframe (must be accompanied by an attestation signed by an officer of the company);
    b. The implementation of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit (must be accompanied by an attestation signed by an officer of the company);
    c. The implementation of freeze protection measures would reduce the generating unit's ability to provide Real Power or Reactive Power capability by more than three percent, or another value supported by the appropriate functional entity (e.g., Transmission Planner, Reliability Coordinator, Balancing Authority, etc.), when freeze protection measures are not in use; or
    d. The implementation of freeze protection measures would reduce the summer net dependable capacity, or net dependable capacity at Peak Demand, of the generating unit by more than three percent or another value supported by the appropriate functional entity (e.g., Transmission Planner, Reliability Coordinator, Balancing Authority, etc.);
    e. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.
6. The implementation of new freeze protection measures to an existing generating unit that has previously communicated a retirement date to the appropriate functional entity (e.g., Transmission Planner, Reliability Coordinator, Balancing Authority, etc.) that falls within

three calendar years of the Generator Cold Weather Constraint declaration;

7. The implementation of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.
8. A determination through an analysis that the freeze protection measure is not available on the commercial market for generating units of comparable types in regions that experience similar winter climate conditions.
9. Implementation of freeze protection measures would not increase reliability of a generating unit due to clearly delineated technical or physical reasons on fuel supply which has been communicated to its Reliability Coordinator or Balancing Authority and are not due to Fixed Fuel Supply Components, and which are outside the Generator Owner's control.
10. Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Generator Cold Weather Critical Components.

The proposed list of possible case-by-case Generator Cold Weather Constraints provides additional clarification and guidance to entities on the types of circumstances that may preclude the implementation of freeze protection measures on their generating units. Generally, these circumstances would include safety limitations, limitations imposed by law or regulation, technical limitations on applying the freeze protection measure, or a lack of commercially available technologies that are effective to address the identified issue. Consistent with Reliability Standard EOP-012-2, proposed Reliability Standard EOP-012-3 would not require an entity to implement unproven technologies.[101] However, proposed Reliability Standard EOP-012-3 would improve upon the prior version of the standard by requiring that the Generator Owner perform an analysis that concludes that the technology is not likely to be effective for the unit. This analysis may include consideration of industry experience (or lack thereof) with the technology, along with any other relevant factors supporting the determination. However, it is the supporting analysis that the

[101] June 2024 Order at P 43. In the Order, the Commission stated that it agreed that the EOP-012 standard should not require the implementation of unproven technologies, but "in its effort to provide flexibility, [the EOP-012-2 standard] falls short of the Commission's directive to develop criteria that are objective, unambiguous, and auditable."

measure is not likely to be effective – and not the extent of industry adoption of the technology – that would determine whether a Generator Cold Weather Constraint would apply. Thus, the criterion is objective, unambiguous, and auditable.

The list of possible case-by-case Generator Cold Weather Constraints in proposed Attachment 1 includes the types of economic constraints identified by the Commission for which the cost of retrofitting may be unduly burdensome, including requiring corrective actions for generating units scheduled to retire in the near future, requiring corrective actions where that would cause the generating unit to be retired in the near future, or requiring corrective actions where that would result in the cancelation of a new generating unit.[102] This list includes consideration of reliability impacts. Two cases seemed particularly well-suited for a threshold for quantification of impacts: those that reduce a generating unit's real or reactive power when the freeze protection measure is not in place and those that would reduce net dependable capacity during summer or at Peak Demand. A value of a three (3) percent reduction as an appropriate level of impact above which the negative impact to the Bulk-Power System resulting from requiring a specific freeze protection measure may be appropriately determined to outweigh the benefits of applying the measure.[103] Recognizing that local and temporal conditions are best understood, measured and predicted by the Generator Owner and affected functional entities, it was determined that the standard should allow flexibility in the selected three percent value when a different value is

[102] *See* June 2024 Order at P 46. These types of constraints must be supported by a determination supported by an analysis, which should consider availability of cost recovery. *See id.* at n. 92. Consistent with the Commission's suggestion, NERC has also proposed to require any such constraint to be accompanied by an attestation. *See id.* ("For example, one approach could be for NERC to provide a limited set of clearly defined circumstances that could serve as constraints, *such as an attestation from* a generator owner or generator operator that…(2) implementing freeze protection measures in accordance with the Reliability Standard would cause the generating unit to retire within two years; or (3) they would cancel a newly scheduled generating unit that has not yet achieved commercial operation if required to comply with the freeze protection requirements of a Standard" (emphasis added)).

[103] As discussed in the Technical Rationale, regional Reliability Standard BAL-002-WECC-3 identifies three percent as a value for reliable operations for required Contingency Reserves. See Technical Rationale, Exhibit D at 29.

supported by the appropriate functional entity as more supportive of reliable operation of the grid. The list includes consideration of other factors that may reasonably preclude the implementation of freeze protection measures, such as the presence of fuel supply issues that would preclude the ability of the generating unit to run at the Extreme Cold Weather Temperature regardless of any freeze protection measures applied at the unit. Lastly, the list includes a general provision, intended to capture other circumstances not specifically identified that may reasonably preclude the implementation of freeze protection measures now or in the future.

While proposed Attachment 1 provides substantial additional detail and clarification to entities regarding the circumstances that may comprise a Generator Cold Weather Constraint, proposed Requirement R8 would require that any Generator Owner declaring a Generator Cold Weather Constraint submit the constraint to the Compliance Enforcement Authority for validation or case-by-case approval. This requirement would help to "ensure entities' declared Generator Cold Weather Constraints are appropriate and can be supported and defended," consistent with the Commission's guidance in the June 2024 Order.[104] To the extent the Compliance Enforcement Authority determines a Generator Cold Weather Constraint is not valid, the Generator Owner would be provided with a timely response so that it may take appropriate measures to provide the necessary operational capability for its generating unit.

Proposed Reliability Standard EOP-012-3 would revise Requirement R8 to require submission to the Compliance Enforcement Authority of all Generator Cold Weather Constraints. Proposed Requirement R9, discussed in the following section, would address requirements for the periodic review of Generator Cold Weather Constraints. Proposed Reliability Standard EOP-012-2 would revise Requirement R8 as follows:

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[104] *See* June 2024 Order at P 47.

R8. Each Generator Owner that ~~creates~~ declares a Generator Cold Weather Constraint ~~declaration~~ in accordance with Attachment 1 shall:

~~**8.1**. Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and~~

8.1. Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows:

- For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or
- For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable.

8.2. Update the operating limitations ~~associated with capability and availability~~ under Requirement R1 Part R1.2 if applicable~~.~~;

8.3. If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2; and

8.4. Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event with the same cause of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause is addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit.

Proposed Requirement R8 Part 8.1 would address the timely submission of declared Generator Cold Weather Constraints to the Compliance Enforcement Authority, which may be NERC or the relevant Regional Entity. As such, it responds to that part of the Commission's directive in the June 2024 Order to "to modify proposed Reliability Standard so that NERC *receives,* reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint

declarations in a timely manner."[105] The remaining part of that directive, for NERC to review, evaluate, and confirm Generator Cold Weather Constraints, is addressed in the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process maintained by the ERO Compliance Monitoring and Enforcement Program. This process, which is included as Exhibit C to this filing, addresses entity submission of constraints, Compliance Enforcement Authority review procedures and timelines, registered entity notifications, and appeal procedures. Under this process, the Compliance Enforcement Authority would endeavor to complete its review of Known Generator Cold Weather Constraint declarations within 10 calendar days of confirming the receipt of a complete submittal, and to complete its review of other Generator Cold Weather Constraint declarations within 45 days. If additional time is needed to complete the review, the Compliance Enforcement Authority would provide notice to the submitting entity. To maintain the appropriate oversight and help promote consistency in the review of Generator Cold Weather Constraints across the ERO Enterprise, each Compliance Enforcement Authority shall provide a quarterly report to NERC that describes each Generator Cold Weather Constraint received, the disposition, and the supporting rationale. NERC may also choose to participate in any individual Generator Cold Weather Constraint review at its discretion.

Proposed Requirement R8 Part 8.3 would describe the steps a Generator Owner must take if its Generator Cold Weather Constraint is determined to be invalid: either implement the corrective actions in accordance with the applicable timeframe, subject to any approved extensions, or for new BES generating units, implement the required capability.

[105] June 2024 Order at P 54. The Commission further stated that "It is up to NERC whether it would like to delegate this task [of reviewing Generator Cold Weather Constraint declarations] the relevant Regional Entities." *See id.*

Proposed Requirement R8 Part 8.4 would require the Generator Owner to notify the Compliance Enforcement Authority if a generating unit experiences a Generator Cold Weather Reliability Event where a corrective action is already addressed by a valid Generator Cold Weather Constraint. This provision addresses concerns raised during the standard development process regarding the potential administrative burdens that would be associated with having to submit multiple Generator Cold Weather constraints for a known, repeat issue affecting one or more generating units. Providing notification to the Compliance Enforcement Authority would help maintain visibility over known reliability issues while reducing duplicative administrative burdens that would do little to advance generator cold weather reliability.

J. Requirement R9: Ongoing Obligations for Generator Owners with Generator Cold Weather Constraints

Proposed Reliability Standard EOP-012-3 Requirement R9 is a new requirement that would address the periodic review of Generator Cold Weather Constraint declarations, carrying forward the periodic review requirements in Reliability Standard EOP-012-2 Requirement R8 Part 8.1. Proposed Requirement R9 would provide as follows:

> **R9**. The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1.
>
> **9.1**. If a Generator Cold Weather Constraint is determined to be no longer valid, then within six (6) calendar months of such determination, the Generator Owner shall develop or update a Corrective Action Plan pursuant to Requirement R7.

Proposed Requirement R9 Part 8.1 would address the Commission's directive in the June 2024 Order to implement more frequent reviews of Generator Cold Weather Constraints than the five years provided in Reliability Standard EOP-012-2 to verify that the declaration remains

valid.[106] Proposed Requirement R9 would require Generator Owners to review all validated Generator Cold Weather Constraints at least once every 36 calendar months to ensure the constraint remains valid. This 36 calendar month timeline was based on consideration of stakeholder comments regarding the optimal timeline for such reviews, considering the pace that new technologies are brought to market. By shortening from five calendar years, the 36 calendar month timeline provides a reasonable approach to meeting the Commission's directive without creating undue administrative burden to periodically monitor if Generator Cold Weather Constraints remain valid or if new technologies have become available that invalidate the previously validated constraint.

Previous language from Reliability Standard EOP-012-2 regarding reviews "as needed when a change of status" occurs was removed due to the more frequent periodicity of the required reviews. During the development process, NERC considered a suggestion to require additional out of cycle reviews, such as following a notification from a regulatory authority.[107] NERC declined to adopt that suggestion, as it did not appear to be supported by the expected pace of technological advancements nor the expected pace at which other circumstances that would support Generator Cold Weather Constraints would change. NERC, however, has considered that other options in its reliability toolkit may be available to advance industry awareness of new freeze protection technologies that may obviate the need for certain constraints.

Proposed Requirement R9 Part 9.1 would clarify the Generator Owner's obligations in the event the Generator Cold Weather Constraint is determined to be no longer valid following this review. For example, a new freeze protection technology is developed that would address the issue, or circumstances change such that the implementation of an existing measure would no longer

106 June 2024 Order at P 94.

107 Exhibit H Complete Record of Development at item 62 (March 2025 Consideration of Comments) at 3.

cause the plant to retire prematurely. In such cases, the Generator Owner would be required to develop or update an existing Corrective Action Plan to specify implementation of the freeze protection measures according to the timelines provided in proposed Requirement R7, along with the other required elements. If another Generator Cold Weather Constraint would apply based on the facts and circumstances, the Generator Owner may submit a new constraint to the Compliance Enforcement Authority for review under Requirement R8. Proposed Requirement R9 Part 9.1 would thus ensure that entities are taking timely action if circumstances change such that a constraint is no longer appropriate under the standard.

VI. EFFECTIVE DATE OF THE PROPOSED RELIABILITY STANDARD

NERC respectfully requests that the Commission approve the implementation plan attached to this petition as **Exhibit B**. The proposed implementation plan strikes an appropriate balance between the need to implement the important protections for cold weather in proposed Reliability Standard EOP-012-3 as expeditiously as possible, while recognizing the work applicable entities may need to perform to become compliant with the revised requirements, particularly as they relate to the declaration and submission of Generator Cold Weather Constraints.[108] Approval would be just, reasonable, not unduly discriminatory or preferential, and in the public interest.

Under the proposed implementation plan for Reliability Standard EOP-012-3, Reliability Standard EOP-012-3 and the revised definition of Generator Cold Weather Constraint would become effective on the later of: (1) October 1, 2025; or (2) the first day of the first calendar quarter

[108] *See* Order No. 672, *supra* note 8, at P 333 ("In considering whether a proposed Reliability Standard is just and reasonable, the Commission will consider also the timetable for implementation of the new requirements, including how the proposal balances any urgency in the need to implement it against the reasonableness of the time allowed for those who must comply to develop the necessary procedures, software, facilities, staffing or other relevant capability.").

that is three (3) months following regulatory approval. The October 1, 2025 date was chosen because, in the United States, the last compliance date for Reliability Standard EOP-012-2 is October 1, 2025 (Requirement R3). This relatively short implementation timeframe reflects NERC's determination that the practical impact of implementing the proposed changes is not expected be significant. Entities, however, would have sufficient notice of their revised obligations. As multiple versions of the EOP-012 standard have been developed over the last several years, additional implementation information is provided to ensure an orderly transition to proposed Reliability Standard EOP-012-3.

During the development of proposed Reliability Standard EOP-012-3, NERC identified a potential concern regarding the implementation of revised Requirement R2 for a subset of new BES generating units entering commercial operation on or after October 1, 2027. Under Reliability Standard EOP-012-1 Requirement R1, Generator Owners owning new generating units would have been required to either implement the necessary capabilities or declare any "technical, commercial, or operational constraints" that precluded them from implementing the necessary capabilities. In Reliability Standard EOP-012-1, the standard specified "with a commercial operation date prior to/subsequent to [Effective Date of the requirement]," which would be determined in accordance with the EOP-012-1 Implementation Plan, as establishing which generating units would be considered existing units and subject to the less stringent requirements, and which generating units would be considered new units and subject to the more stringent requirements. In developing Reliability Standard EOP-012-2 and a shorter Implementation Plan to meet the directives of the February 2023 Order, the EOP-012-2 drafting team determined to replace "Effective Date of this requirement" with a date certain, October 1, 2027. In establishing this date, the EOP-012-2 drafting team considered the original proposed Implementation Plan for

Reliability Standard EOP-012-1 which would have had this requirement effective April 1, 2028. The drafting team also considered the Commission's directives from the February 2023 Order to shorten this plan as it related to existing generation, the need to ensure generation is prepared for cold weather, as well as the fact that new generation coming online prior to October 1, 2027 is likely to be significantly advanced past the design phase when incorporating measures to provide capability in sustained wind conditions would be most cost effective and reasonable.[109] In setting this date, Reliability Standard EOP-012-2 introduced the option for owners of new generating units to develop a Corrective Action Plan, in the event they could not meet the more stringent requirements for new generation upon entering commercial operation on or after October 1, 2027. To the extent a Generator Cold Weather Constraint would apply, it would be addressed through Requirement R7 addressing Corrective Action Plans.

In addressing the Commission's directive to remove this Corrective Action Plan option in proposed Reliability Standard EOP-012-3, it was determined that some limited allowance needed to be made for the units that were thought to be far along in the construction process, using designs that may have predated the development and approval of the EOP-012 standard and which may not meet the standard's requirements for new generating units without significant additional work. It was also considered that some of these generating units may be fully constructed but not yet in "commercial operation" by October 1, 2027 due to the varying requirements for achieving that designation in different regions. In the June 2024 Order, the Commission stated that, while it was persuaded by NERC's rationale that there needs to be allowances made for units that are well into their construction phase to complete corrective action plans for elements already designed, it was concerned that Reliability Standard EOP-012-2 did not clearly differentiate between projects in an

[109] *See* EOP-012-2 Petition, *supra* note 50, at 39-40.

advanced stage of construction and those in a lesser phase of construction.[110] The proposed implementation plan for proposed Reliability Standard EOP-012-3 would define such projects and allow them additional time to come into compliance with the standard without requiring them to delay their commercial operation date.

The proposed implementation plan would provide that Generator Owners owning BES generating units entering commercial operation on or after October 1, 2027 shall comply with Requirement R2 by the commercial operation date, with any Generator Cold Weather Constraints submitted in accordance with the timeline provided in Requirement R8 (i.e. within 15 days of entering commercial operation). However, for generating units for which the Generator Owner first contractually committed to design criteria relevant to Requirement R2 before June 29, 2023 and which enter commercial operation between October 1, 2027 and March 31, 2028, the Generator Owner shall comply with Requirement R2 relating to implementing required capability by no later than April 1, 2028.

To be eligible for this phased-in compliance option, the Generator Owner must have "first contractually committed to the design criteria" for the new generating unit before June 29, 2023, and the generating unit must first enter commercial operation between October 1, 2027 and March 31, 2028 (inclusive of the start and end dates). Proposed footnote 2 would clarify that such commitments would be demonstrated by signed contracts creating a binding legal agreement with respect to the design criteria for the unit. The June 29, 2023 date represents the date by which U.S.-based Generator Owners would have been on reasonable notice of the specific nature of their new obligations and could take the appropriate steps to change their designs to facilitate compliance

110 *See* June 2024 Order at P 71.

upon entering commercial operation.[111] While maintaining the October 1, 2027 date as the date after which new BES generating units must meet the more stringent Requirement R2, the proposed implementation plan for Reliability Standard EOP-012-3 would in effect restore the original EOP-012-1 timeline for the new BES generating units that would be most affected by the changes across standard versions.

While the scope of generating units meeting these criteria is difficult to estimate and is generally thought to be small, eliminating the ability to develop a Corrective Action Plan at this stage could place a significant burden on the affected Generator Owners. This is especially true when this change is combined with the proposed changes to the Generator Cold Weather Constraint criteria in proposed Reliability Standard EOP-012-3. If Generator Owners felt compelled to delay the commercial operation date for such units past winter 2027-2028 to meet the newly clarified and revised requirements, it could reduce new generation at a time when NERC has projected an increased risk of reserve margin shortfalls in several areas of North America.[112] Thus, NERC submits this limited phased-in compliance option is just and reasonable.

NERC's proposed implementation timeline balances the urgency in the need to implement the standards against the time allowed for those who must comply to develop necessary procedures and other relevant capabilities, including developing any requests for Corrective Action Plan

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[111] The Commission issued its order approving EOP-012-1 and the definition of Extreme Cold Weather Temperature in February 2023; however, the EOP-012-3 drafting team considered comments stating that there was still some regulatory uncertainty past this time, as several entities had filed for rehearing on various aspects of the standard. On June 29, 2023, FERC issued an order addressing arguments raised on rehearing, resolving any remaining uncertainty regarding the standard to which new generation would be expected to perform in the future. *N. Am. Elec. Reliability Corp.*, 183 FERC ¶ 61,222 (2023). During the development process, several alternative dates and approaches were considered. *See* Technical Rationale Exhibit D at 11-14 for additional discussion and supporting rationale.

[112] *See* NERC, *2024 Long-Term Reliability Assessment* (Dec. 2024) at 6 (summarizing areas at risk in 2025-2029 in normal peak and extreme conditions), https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_Long%20Term%20Reliability%20Assessment_2024.pdf.

extensions, preparing any Generator Cold Weather Constraint declarations for Compliance Enforcement Authority review, or for the new BES generating units identified above, implementing freeze protection measures to meet the more stringent requirements of Requirement R2.[113]

While NERC maintains that its proposed implementation period is reasonable considering the above factors, NERC continues to strongly encourage entities to prioritize implementation of proposed Reliability Standard EOP-012-3 and to comply with it, in whole or in part, as soon as circumstances allow.

VII. NERC AND REGIONAL ENTITY EFFORTS TO ENSURE EFFECTIVE RELIABILITY STANDARDS FOR COLD WEATHER

NERC is executing a comprehensive cold weather strategy for future winter seasons to monitor the implementation of the cold weather Reliability Standards, including the EOP-012 Reliability Standard. This strategy consists of several established and proposed elements intended to assess the efficacy of the standards to address cold weather reliability risks and identify opportunities to further clarify or improve the standards.

First, NERC collects data on the winterization of generating units under the EOP-012 standard. In the February 2023 Order approving Reliability Standard EOP-012-1 and directing further revisions, the Commission directed NERC to develop a plan to collect data on the winterization of generating units and to submit an annual informational filing on the analysis of the data. Specifically, the Commission directed NERC to collect data and submit analysis that will allow the Commission to understand the efficacy of, and monitor the ongoing risk posed by: (1) technical, commercial, or operational constraint provisions in EOP-012-1, Requirements R1, R6, and R7; and (2) actual performance of freeze protection measures during future extreme cold

[113] *See* Order No. 672, *supra* note 8.

weather events.[114] The Commission accepted NERC's plan on May 23, 2024.[115] Given the extensive revisions to the Generator Cold Weather Constraint framework since the approval of Reliability Standard EOP-012-1, NERC will review its cold weather data collection plan following Commission approval of proposed Reliability Standard EOP-012-3 to determine what, if any, adjustments to the plan or its implementation may be necessary to facilitate accurate and meaningful reporting and reduce duplicative reporting burdens for entities. NERC will work with Commission staff on this review and will report any adjustments made in its first annual informational filing on October 1, 2025.

Second, NERC has proposed a compliance abeyance period for proposed Reliability Standard EOP-012-3 Requirement R1 Part 1.1 with respect to the calculation of the Extreme Cold Weather Temperature. This calculation is foundational to the performance required under the EOP-012 standard; however, as discussed in Section V.B, multiple stakeholders have raised concerns about how to perform this calculation when their available data sets may have missing or invalid hourly values. It is NERC's position that Generator Owners have flexibility to determine how they will account for such gaps, taking into consideration that the overall goal of the EOP-012 standard is to improve generator preparedness for extreme cold weather conditions. Nevertheless, NERC recognizes that some concern remains about how NERC and the Regional Entities will review such determinations during compliance monitoring activities. To address this concern, NERC proposes a two—year compliance abeyance period in Section C. Compliance of the standard, that would provide as follows:

> **Compliance Abeyance Period**: From the effective date of Reliability Standard EOP-012-3 until October 1, 2027, the Compliance Enforcement Authority will not pursue an action under Sections 4A.0 or 5.0 of Appendix 4C to the Rules of

[114] February 2023 Order at P 94.

[115] *See N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61,087 (2024) (letter order).

> Procedure for a failure to comply with Reliability Standard EOP-012-3 Requirement R1 Part 1.1 with respect to the calculation of the Extreme Cold Weather Temperature for an applicable generating unit, or any other failure to comply resulting from an incorrect calculation of the Extreme Cold Weather Temperature for that generating unit, against any entity acting in good faith to comply with the standard in accordance with the relevant implementation plan. "Good faith" in this context refers to a sincere intention to comply with Reliability Standard EOP-012-3, regarding all requirements based on the calculation of the Extreme Cold Weather Temperature for each applicable generating unit, following a reasonable and serious assessment by the entity in determining how this Reliability Standard should be applied to its particular facts and circumstances. Entities shall participate in any compliance monitoring activities undertaken by the Compliance Enforcement Authority during this abeyance period and submit documentation as requested.

In NERC's November 8, 2024 supplemental filing to the Five-Year Performance Assessment required under 18 C.F.R. § 39.3(c), NERC described how it would begin using a "potential noncompliance abeyance period" to enhance NERC's standard development process agility, thereby reducing concerns over compliance risk during standards development so that the focus can be on addressing risks to reliability.[116] As NERC explained in that filing, this compliance abeyance period would encourage entities to share observations and experiences through implementation of new standards without fear of potential noncompliance (so long as they are acting in good faith) to mitigate reliability risks. This feedback loop, coupled with insights generated from more robust data collection from enforcement activities of trends, themes, and recommendations, would collectively be used to inform the standards development process after initial compliance of new standards to revise the standards prior to full enforcement.

While proposed Reliability Standard EOP-012-3 is not a "new" standard, requirements to calculate the Extreme Cold Weather Temperature have only been mandatory and enforceable in the United States for approximately six months (since October 1, 2024). Further, the calculation

[116] *Supplemental Filing of NERC to the Five-Year ERO Performance Assessment Report,* Docket No. RR24-4-000 at 3, 10 (Nov. 8, 2024). The Commission accepted NERC's five year performance assessment filings on December 19, 2024. *N. Am. Elec. Reliability Corp.*, 189 FERC ¶ 61,211 (2024).

of the Extreme Cold Weather Temperature would come into greater focus as entities begin implementing the substantially revised and clarified requirements for Generator Cold Weather Constraints and Corrective Action Plans. Considering the stakeholder concerns raised during the development of proposed Reliability Standard EOP-012-3, NERC has determined that a compliance abeyance period would serve two important benefits for reliability.

First, by removing concerns about compliance implications, it would encourage entities with concerns about their Extreme Cold Weather Temperature calculations to seek guidance from the ERO Enterprise during the two-year abeyance period. To the extent this guidance results in a lower calculated Extreme Cold Weather Temperature for a generating unit, the entity may make the necessary adjustments to ensure reliable operations at this lower temperature more quickly than if the issue had been discovered in future years, such as during a periodic compliance audit or following a reliability event.

Second, a compliance abeyance period would provide a focused means for the ERO Enterprise to gather information and feedback on this aspect of the standard. This information and feedback could inform the development of future revisions to the standard that would help ensure it remains an effective and efficient standard for improving generator cold weather reliability, as well as inform future reporting, analysis, and other follow up activities for the EOP-012 standard. In determining the appropriate length of time for the compliance abeyance period, NERC considered the urgency in the need to fully implement the EOP-012 Reliability Standard, the time that may be needed for information collection and analysis, and the time that would be needed to make any necessary standards revisions based on that analysis. Based on these considerations, NERC determined that a two-year compliance abeyance period would be appropriate.

During the proposed compliance abeyance period, NERC and the Regional Entities would focus on obtaining additional information that could be used to inform lessons learned regarding how entities are calculating the Extreme Cold Weather Temperature and accounting for gaps in their data sets. This information may be obtained during compliance monitoring activities, one-on-one discussions with entities, or small group advisory sessions specifically focused on this aspect of the EOP-012 standard. The resulting lessons learned would be used to inform future revisions to the EOP-012 standard or other guidance as appropriate. NERC and the Regional Entities would continue to process potential noncompliance for those entities that did not engage in good faith efforts to comply with the standard. Depending on the facts and circumstances, this could include failing to calculate the Extreme Cold Weather Temperature for a generating unit or failing to do so in a timely manner.

In addition to the above efforts focused on the EOP-012 Reliability Standard, NERC and the Regional Entities are performing robust compliance monitoring and enforcement of each of the currently effective and approved generator cold weather Reliability Standards, consistent with Recommendation 1(b) of the Winter Storm Elliott report.[117] NERC and the Regional Entities are currently preparing a strategy to enhance consistency and rigor in this compliance monitoring.

NERC and the Regional Entities will also continue their longstanding efforts to support entities in their cold weather preparedness through workshops and other outreach opportunities.

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[117] Winter Storm Elliott Report, *supra* note 13, at 132:

> Recommendation 1(b): Findings from the Report support the need for robust monitoring by NERC and the Regional Entities of compliance with the currently-effective and approved generator cold weather Reliability Standards, to determine if reliability gaps exist. NERC should identify the generating units that are at the highest risk during extreme cold weather and work with the Regional Entities (and Balancing Authorities, if applicable) to perform cold weather verifications of those generating units until all of the extreme cold weather Standards proposed by the 2021 Report are approved and effective. (Verify highest risk units by Q4, 2023; implement by Q3, 2024).

Consistent with reviews performed following prior winter storms, NERC, Regional Entity, and Commission staff will also undertake an effort to review system performance during Arctic cold conditions that traversed North America in January 2025 for insights and lessons learned.[118]

To the extent these activities provide opportunities to improve or enhance any of the cold weather Reliability Standards to better achieve their reliability goals, NERC will promptly initiate the standards development process to make the needed changes.

[118] NERC, *FERC, NERC To Review Bulk Power System Performance During Recent Cold Snap*, (posted Feb. 3, 2025) https://www.nerc.com/news/Pages/FERC,-NERC-to-Review-Bulk-Power-System-Performance-During-Recent-Cold-Snap.aspx. *See also* FERC, *Presentation, System Performance Review of the January 2024 Artic Storms* (Apr. 25, 2024), https://www.ferc.gov/news-events/news/presentation-system-performance-review-january-2024-arctic-storms#:~:text=Our%20review%20found%20that%20both,shed%20during%20Gerri%20and%20Heather (summarizing the results of the FERC, NERC, and Regional Entity staff review of Bulk-Power System performance during the January 2024 winter storms).

VIII. CONCLUSION

For the reasons set forth above, NERC respectfully requests that the Commission approve:

- Proposed Reliability Standard EOP-012-3 and the associated elements, as shown in **Exhibit A;**
- the retirement of Reliability Standard EOP-012-2; and
- The implementation plan included in **Exhibit B**.

Respectfully submitted,

/s/ Lauren A. Perotti

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April 10, 2025

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Exhibit A
Proposed Reliability Standard EOP-012-3

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Exhibit A-1
Proposed Reliability Standard EOP-012-3
Clean

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

This is the Final posting pending Board approval.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	July 17, 2024
SAR posted for comment	July 18, 2024 – August 16, 2024
20-day formal comment period with initial ballot	October 17, 2024 – November 5, 2024
18-day formal comment period with additional ballot	December 3, 2024 – December 20, 2024
45-day comment period	January 27, 2025 – March 12, 2025

Anticipated Actions	Date
Board adoption	April 4, 2025

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would be expected to result in improved generating unit performance during cold temperatures.

Previously Approved Terms

This section includes previously approved terms from EOP-012-1 and EOP-012-2. It is included to help with drafting and the posting of EOP-012-3.

Extreme Cold Weather Temperature – The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 01/01/2000 through the date the temperature is calculated.

Generator Cold Weather Critical Component – Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

Fixed Fuel Supply Component – Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

A. Introduction

1. **Title:** Extreme Cold Weather Preparedness and Operations

2. **Number:** EOP-012-3

3. **Purpose:** To address the effects of operating in extreme cold weather by ensuring each Generator Owner has developed and implemented plan(s) to mitigate the reliability impacts of extreme cold weather on its applicable generating units.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Generator Owner

   4.1.2. Generator Operator

   4.2. Facilities:

   4.2.1. Bulk Electric System (BES) generating units. For purposes of this standard, the term "generating unit" subject to these requirements refers to the following BES resources:

   4.2.1.1. A Bulk Electric System generating resource identified in the BES definition, Inclusion I2 and I4; or

   4.2.1.2. A Blackstart Resource, identified in the BES definition, Inclusion I3.

5. **Effective Date:** See Implementation Plan for Project 2024-03.

B. Requirements and Measures

R1. At least once every five (5) calendar years, each Generator Owner shall, for each of its applicable generating unit(s): [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]

1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable generating unit(s) and identify the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, if necessary; and

1.1.1. If the recalculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation, and if new corrective actions are needed to provide the required operational capability described in Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) calendar months of the recalculation.

1.2. Identify generating unit(s) cold weather data, to include:

1.2.1. Generating unit(s) operating limitations in cold weather to include:

1.2.1.1. Capability and availability;

1.2.1.2. Fuel supply and inventory concerns;

1.2.1.3. Start-up issues;

1.2.1.4. Fuel switching capabilities; and

1.2.1.5. Environmental constraints.

1.2.2. Generating unit(s) minimum:

- Design temperature, and if available, the concurrent wind speed and precipitation;
- Historical operating temperature at least one hour in duration, and if available, the concurrent wind speed and precipitation; or
- Current cold weather performance temperature determined by an engineering analysis, which includes the concurrent wind speed and precipitation.

M1. Each Generator Owner will have evidence documenting its Extreme Cold Weather Temperature calculation, including the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, and design information, operating data, or engineering analysis that supports its generating unit minimum temperature.

R2. Applicable to generating units that begin commercial operation[1] on or after October 1, 2027[2]: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[3] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or
- Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R2, or it has declared a Generator Cold Weather Constraint for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature under Requirement R1 Part 1.2.2 which is equal to or less than the generating unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and Generator Cold Weather Constraints (if applicable).

R3. Applicable to generating unit(s) in commercial operation prior to October 1, 2027:[4]Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[5] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature; or

[1] Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing.

[2] In non-U.S. jurisdictions, this will be the date established by the Applicable Governmental Authority.

[3] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[4] In non-U.S. jurisdictions, this will be the date established by the Applicable Governmental Authority.

[5] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

- Develop a Corrective Action Plan to add new or modify existing freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature.

M3. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R3, or it has developed a Corrective Action Plan for the identified issues. Acceptable evidence may include, but is not limited to, the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature per Part 1.2.2 which is equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and Corrective Action Plan(s).

R4. Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness plan(s) shall include the following, at a minimum: *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. The lowest calculated Extreme Cold Weather Temperature for each generating unit, as determined in Requirement R1;[6]

4.2. The generating unit cold weather data, as determined in Requirement R1, Part 1.2;

4.3. Documentation identifying Generator Cold Weather Critical Components;

4.4. Documentation of freeze protection measures implemented on Generator Cold Weather Critical Components that includes measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain);

4.5. Annual inspection and maintenance of generating unit(s) freeze protection measures implemented on Generator Cold Weather Critical Components.

M4. Each Generator Owner will have evidence documenting that its cold weather preparedness plan(s) was implemented and maintained in accordance with Requirement R4. Examples of documentation to demonstrate a cold weather preparedness plan may include existing operating procedures, plans, checklists, or processes. Examples of documentation, to demonstrate inspections and maintenance have been completed, may include, but are not limited to, completed work order(s) from the Generator Owner's work management system and/or freeze protection checklists identifying the measures inspected and maintained for the Generator Cold Weather Critical Components.

R5. Each Generator Owner, in conjunction with its Generator Operator, shall identify the entity responsible for providing generating unit-specific training, and that identified entity shall provide annual training to the maintenance and operations personnel, as

[6] Generator Owners shall include the lowest calculated Extreme Cold Weather Temperature for the unit, even where subsequent periodic re-calculations under Requirement R1 Part 1.1 cause an increase in the Extreme Cold Weather Temperature.

applicable, responsible for implementing the cold weather preparedness plan(s) developed pursuant to Requirement R4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*

M5. Each Generator Operator or Generator Owner will have documented evidence that the applicable personnel completed annual training of the Generator Owner's cold weather preparedness plan(s). This evidence may include, but is not limited to, documents such as personnel training records, training materials, date of training, agendas or learning objectives, attendance at pre-work briefings, review of work order tasks, tailboards, attendance logs for classroom training, and completion records for computer-based training in fulfillment of Requirement R5.

R6. Each Generator Owner shall, after experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[7] develop and implement[8] a Corrective Action Plan(s) to address identified freezing issues as follows: *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

6.1. The Generator Owner shall develop a Corrective Action Plan for the generating unit that experienced a Generator Cold Weather Reliability Event no later than prior to the first day of the first December following the Generator Cold Weather Reliability Event.[9]

6.2. The Generator Owner shall conduct a review of other generating unit(s) in its fleet with the same or similar equipment as the affected generating unit to determine if any of those generating unit(s) are susceptible to the identified freezing issues. If corrective actions are needed, the Generator Owner shall develop or update a Corrective Action Plan to address the other generating unit(s). This review and, if applicable, the development or update of any Corrective Action Plan(s), shall be completed no later than 12 calendar months following the Generator Cold Weather Reliability Event.

6.3. For each Corrective Action Plan, the Generator Owner shall include at a minimum:

6.3.1. A summary of the identified cause(s) of the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;

[7] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[8] If a Generator Owner has previously experienced a Generator Cold Weather Reliability Event and developed a Corrective Action Plan for the generating unit or units under Requirement R6 Parts 6.1 or 6.2, the Generator Owner may review and update its existing plan(s) in lieu of developing a new plan.

[9] For events that occur in September, October, or November, the timetable shall specify completion prior to December 1 of the following calendar year.

6.3.2. A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures;

6.3.3. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed;

6.3.4. A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required; and

6.3.5. A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows:

6.3.5.1. For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.[10]

6.3.5.2. For other generating unit(s) owned by the Generator Owner, within 24 calendar months of completing the review required in Part 6.2, or no later than 36 calendar months following the Generator Cold Weather Reliability Event.

6.4 If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval. The submitted Corrective Action Plan extension request shall include the following:

6.4.1. An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner;

6.4.2. Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and

6.4.3. Updated timetable for implementing the selected actions in Part 6.3.2.

6.5 The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, as applicable.

M6. Each Generator Owner will have dated evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event for applicable unit(s) in accordance with Requirement R6. Acceptable evidence may include, but is not limited

[10] For events that occur in September, October or November, the timetable shall specify completion prior to December 1 of the following calendar year.

to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraint(s).

R7. Each Generator Owner that is required to develop a Corrective Action Plan under Requirements R1, R3, or R9 shall develop and implement the Corrective Action Plan in accordance with the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

7.1. For each Corrective Action Plan, the Generator Owner shall include at a minimum the following:

7.1.1. A list of any actions that require new freeze protection measures, with a timetable specifying completion of such measures within 48 calendar months of completing development of the Corrective Action Plan;

7.1.2. A list of any actions that remedy issues with existing freeze protection measures with a timetable specifying completion of such measures within 24 calendar months of completing development of the Corrective Action Plan (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures);

7.1.3. A description of updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; and

7.1.4. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed.

7.2. If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R7 Part 7.1 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following:

7.2.1. An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.2.2. Revisions to the selected actions in Parts 7.1, if any, including utilization of operating procedures, if applicable; and

7.2.3. Updated timetable for implementing the selected actions in Part 7.1.

7.3. The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8.

M7. Each Generator Owner shall have dated evidence that it developed and implemented a Corrective Action Plan for applicable unit(s) in accordance with Requirement R7. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraints.

R8. Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

8.1. Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows:

- For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or
- For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable.

8.2. Update the operating limitations under Requirement R1 Part R1.2 if applicable;

8.3. If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2;

8.4. Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event with the same cause of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause is addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit.

M8. Each Generator Owner shall have dated evidence that demonstrates it performed the actions in accordance with Requirement R8. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): a copy of the Generator Cold Weather Constraint declaration, evidence the declaration was provided to the CEA in accordance with the specified timeframe, records that document update(s) to the operating limitations, as needed, updates to the Corrective

Action Plan(s), if applicable, and documentation and notice to the CEA of subsequent Generator Cold Weather Reliability Events, if applicable.

R9. The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

9.1 If a Generator Cold Weather Constraint is determined to be no longer valid, then within six (6) calendar months of such determination, the Generator Owner shall develop or update a Corrective Action Plan pursuant to Requirement R7.

M9. Each Generator Owner shall have dated evidence that demonstrates it reviewed Generator Cold Weather Constraints in accordance with Requirement R9. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the performance of the review within the required timeframe, records that demonstrate that a Corrective Action Plan was developed or updated within the required timeframe (if applicable).

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" (CEA) means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation.

- The Generator Owner shall retain data or evidence to support its current Extreme Cold Weather Temperature calculation and generating unit cold weather data, plus each calculation or revision since the last audit, for Requirement R1 and Measure M1.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R2 or R3 is complete, whichever timeframe is greater, for Requirements R2 and R3 and Measures M2 and M3. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall retain the current cold weather preparedness plan(s), as evidence of review or revision history, plus each version issued since the last audit and evidence of compliance since the last audit for Requirement R4 and Measure M4.
- The Generator Owner or Generator Operator shall keep data or evidence to show compliance for three years for Requirement R5 and Measure M5.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extensions (if applicable), under Requirement R6 is complete, whichever timeframe is greater, for Requirement R6 and Measure M6. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extension (if applicable), under Requirement R7 is complete, whichever timeframe is

greater, for Requirement R7 and Measure M7. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.

- The Generator Owner shall maintain data or evidence to support its current Generator Cold Weather Constraint declaration(s), plus each revision since the last audit, for Requirement R8 and Measure M8.
- The Generator Owner shall maintain data or evidence to support that it reviewed each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months since the last audit, for Requirement R9 and Measure M9.

1.3. Compliance Monitoring and Enforcement Program: "Compliance Monitoring Enforcement Program" or "CMEP" means, depending on the context (1) the NERC Compliance Monitoring and Enforcement Program (Appendix 4C to the NERC Rules of Procedure) or the Commission-approved program of a Regional Entity, as applicable, or (2) the program, department or organization within NERC or a Regional Entity that is responsible for performing compliance monitoring and enforcement activities with respect to Registered Entities' compliance with Reliability Standards.

1.4. Compliance Abeyance Period: From the effective date of Reliability Standard EOP-012-3 until October 1, 2027, the CEA will not pursue an action under Sections 4A.0 or 5.0 of Appendix 4C to the Rules of Procedure for a failure to comply with Reliability Standard EOP-012-3 Requirement R1 Part 1.1 with respect to the calculation of the Extreme Cold Weather Temperature for an applicable generating unit, or any other failure to comply resulting from an incorrect calculation of the Extreme Cold Weather Temperature for that generating unit, against any entity acting in good faith to comply with the standard in accordance with the relevant implementation plan. "Good faith" in this context refers to a sincere intention to comply with Reliability Standard EOP-012-3 regarding all requirements based on the calculation of the Extreme Cold Weather Temperature for each applicable generating unit, following a reasonable and serious assessment by the entity in determining how this Reliability Standard should be applied to its particular facts and circumstances. Entities shall participate in any compliance monitoring activities undertaken by the CEA during this abeyance period and submit documentation as requested.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.
R2.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not declare a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not declare a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not declare a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not declare a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.
R3.	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	measure(s) meeting the criteria in Requirement R3 for 5% or less of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for 5% or less of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 20% of its applicable units.
R4.	The Generator Owner implemented a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable parts within Requirement R4.	The Generator Owner maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.
R5.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	described in Requirement R5 to the greater of: • one applicable personnel for a single generating unit; or • 5% or less of its total applicable personnel.	described in Requirement R5 to the greater of: • two applicable personnel for a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	described in Requirement R5 to the greater of: • three applicable personnel for a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	described in Requirement R5 to the greater of: • four or more applicable personnel for a single generating unit; or • more than 15% of its total applicable personnel.
R6.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 12 but fewer than 15 calendar months after the Generator Cold Weather Reliability Event.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 15 but fewer than 18 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirement R6, but it failed to contain one of the elements in Requirement R6, Part 6.3.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 18 but fewer than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirements R6, but it failed to contain two of the elements in Requirement R6, Part 6.3.	The Generator Owner failed to develop a Corrective Action Plan where required under Requirement R6. OR The Generator Owner developed a Corrective Action Plan where required under Requirement R6, but failed to implement it. OR The Generator Owner failed to conduct a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, or the Generator Owner

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
			OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable), but it did not include one of the required elements.	conducted the review, but it was conducted more than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan, but failed to contain three or more of the elements in Requirement R6, Part 6.3. OR The Generator Owner exceeded the timetables specified for completion in Requirement R6, Part 6.3.5, but did not submit a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable). OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.4 (if applicable), but it did not

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				include two or more of the elements in Requirement R6, Part 6.4. OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s), in accordance with Requirement R6, Part 6.5.
R7.	N/A	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include a description of updates to the cold weather preparedness plan and identification of operating limits as required in Requirement R7, Parts 7.1.3 and 7.1.4.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include one of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include two or more of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
			it did not include one of the required elements.	it did not include two or more of the required elements. OR The Generator Owner failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable). OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) in accordance with Requirement R7 Part 7.3.
R8.	The Generator Owner declared a Generator Cold Weather Constraint and submitted it to the CEA but it did not do so within the timeframe provided in Requirement R8 Part 8.1.	The Generator Owner declared a Generator Cold Weather Constraint, but failed to update its operating limitations as required under Requirement R8, Part 8.2 (if applicable).	The Generator Owner declared a Cold Weather Constraint, but failed to update its Corrective Action Plan following a determination by the CEA that the constraint is invalid in	The Generator Owner declared a Generator Cold Weather Constraint but failed to submit it to the CEA. OR The Generator Owner failed to implement freeze protection

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
			accordance with Requirement R8 Part 8.3 (as applicable). OR The Generator Owner failed to document and provide the required notice to the CEA under Requirement R8 Part 8.4 (if applicable).	measures to provide the necessary capability in accordance with Requirement R8 Part 8.3.
R9.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 36 but fewer than 38 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 38 but fewer than 40 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 40 but fewer than 42 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9, but this review was performed more than 42 calendar months after CEA validation or after the previous Generator Owner review. OR The Generator Owner failed to review a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				valid in accordance with Requirement R9. OR The Generator Owner failed to develop or update a Corrective Action Plan where required by Requirement R9, Part 9.1 (if applicable).

D. Regional Variances

None.

E. Associated Documents

Implementation Plan

Calculating Extreme Cold Weather Temperature

EOP-012-3 Technical Rationale

Generator Cold Weather CAP Extension and Constraint Process

Attachment 1

Generator Owners shall determine the applicability of a Generator Cold Weather Constraint declared under Requirements R2, R6, and R7 using the criteria as described below.

The definition of a Generator Cold Weather Constraint is: "Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would be expected to result in improved generating unit performance during cold temperatures."

A Generator Cold Weather Constraint can be identified using the following criteria:

Known Generator Cold Weather Constraints

The following are circumstances which, if present and confirmed as valid by the CEA, will constitute known Generator Cold Weather Constraints:

- Individual wind turbine towers manufactured prior to October 1, 2029 that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1 for generating units that began commercial operation prior to October 1, 2031.
- Application of freeze protection measures to meet the requirements of this Standard that require:
    - Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities;
    - Removal of accumulated frozen precipitation on solar panels;
    - Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters; or
    - Implementation of heat tracing or other de-icing technologies for wind turbine blades, that, through analysis, have been shown to not be effective or not made available by the OEM for generating units of a comparable types in regions that experience similar winter climate conditions.

Case-by-case Determinations of Generator Cold Weather Constraints

The following situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the CEA will these circumstances constitute a valid Generator Cold Weather Constraint:

1. The implementation of a specific freeze protection measure will void an equipment warranty.
2. The implementation of a specific freeze protection measure would exceed a manufacturer's design limitation and the exceedance is expected to functionally impair or degrade the effective operation of the impacted component or system.

3. The implementation of a specific freeze protection measure is precluded by technical or physical limitations. For example:
    a. Installing wind breaks around a cooling tower or air-cooled heat exchanger that requires free airflow for its functionality;
    b. Implementing freeze protection measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system;
    c. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.
4. A determination, through an analysis, that the freeze protection measure would not be effective for the generating unit. Such a determination may be supported, for example, by fleet or industry operating experience (or lack thereof) with the freeze protection measure on generating unit(s) of comparable types in regions that experience similar winter climate conditions.
5. A determination, through an analysis, that the implementation of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:
    a. The implementation of freeze protection measures, while feasible, would result in the accelerated premature retirement of an existing generating unit with no acceptable replacement available within the accelerated timeframe (must be accompanied by an attestation signed by an officer of the company);
    b. The implementation of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit (must be accompanied by an attestation signed by an officer of the company);
    c. The implementation of freeze protection measures would reduce the generating unit's ability to provide Real Power or Reactive Power capability by more than three percent, or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.), when freeze protection measures are not in use; or
    d. The implementation of freeze protection measures would reduce the summer net dependable capacity[1], or net dependable capacity at Peak Demand, of the generating unit by more than three percent or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.);
    e. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.

[1] "net dependable capacity" refers to the definition used for reporting to the NERC in Generating Availability Data System (GADS) appropriate for the generation type.

6. The implementation of new freeze protection measures to an existing generating unit that has previously communicated a retirement date to the appropriate functional entity (e.g., Transmission Planner (TP), Reliability Coordinator (RC), Balancing Authority (BA), etc.) that falls within three calendar years of the Generator Cold Weather Constraint declaration;
7. The implementation of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.
8. A determination through an analysis that the freeze protection measure is not available on the commercial market for generating units of comparable types in regions that experience similar winter climate conditions.
9. Implementation of freeze protection measures would not increase reliability of a generating unit due to clearly delineated technical or physical reasons on fuel supply which has been communicated to its Reliability Coordinator (RC) or Balancing Authority (BA) and are not due to Fixed Fuel Supply Components, and which are outside the Generator Owner's control.
10. Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Generator Cold Weather Critical Components.

An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

Version History

Version	Date	Action	Change Tracking
1	October 1, 2022	Drafted by Project 2021-07.	New
2	February 16, 2023	Revisions drafted by Project 2021-07 due to FERC Order and inquiry Recommendations.	Revisions
2	February 15,2024	Board Adopted.	
2	June 27, 2024	FERC Approved.	
3	April 4, 2025	Drafted by Project 2024-03, Revised by the Standards Committee under Section 321 of the NERC Rules of Procedure.	As directed by the June 2024 FERC Order

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Exhibit A-2
Proposed Reliability Standard EOP-012-3
Redline to Last Approved (EOP-012-2)

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

This is the Final posting pending Board approval.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	July 17, 2024
SAR posted for comment	July 18, 2024 – August 16, 2024
20-day formal comment period with initial ballot	October 17, 2024 – November 5, 2024
18-day formal comment period with additional ballot	December 3, 2024 – December 20, 2024
45-day comment period	January 27, 2025 – March 12, 2025

Anticipated Actions	Date
Board adoption	April 4, 2025

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. ~~. using the criteria below.~~ Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include ~~acceptable~~ practices, methods, or technologies ~~generally implemented by the electric industry in areas that experience similar winter climate conditions.~~ that would be expected to result in improved generating unit performance during cold temperatures.

~~Criteria used to determine a constraint include practices, methods, or technologies which, given the exercise of reasonable judgment in light of the facts known at the time the decision to declare the constraint was made:~~

~~Were not broadly implemented at generating units for comparable unit types in regions that experience similar winter climate conditions to provide reasonable assurance of efficacy;~~

~~Could not have been expected to accomplish the desired result; or~~

~~Could not have been implemented at a reasonable cost consistent with good business practices, reliability, or safety. A cost may be deemed "unreasonable" when implementation of selected freeze protection measure(s) are uneconomical to the extent that they would require prohibitively expensive modifications or significant expenditures on equipment with minimal remaining life.~~

Previously Approved Terms

This section includes previously approved terms from EOP-012-1 and EOP-012-2. It is included to help with drafting and the posting of EOP-012-3.

Extreme Cold Weather Temperature – The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 01/01/2000 through the date the temperature is calculated.

Generator Cold Weather Critical Component – Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed

Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

Fixed Fuel Supply Component – Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

A. Introduction

1. **Title:** Extreme Cold Weather Preparedness and Operations

2. **Number:** EOP-~~012-2~~012-3

3. **Purpose:** To address the effects of operating in extreme cold weather by ensuring each Generator Owner has developed and implemented plan(s) to mitigate the reliability impacts of extreme cold weather on its applicable generating units.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Generator Owner

   4.1.2. Generator Operator

   4.2. Facilities:

   4.2.1. Bulk Electric System (BES) generating units. For purposes of this standard, the term "generating unit" subject to these requirements refers to the following ~~Bulk Electric System (~~BES~~)~~ resources:

   4.2.1.1. A Bulk Electric System generating resource identified in the BES definition, ~~inclusion~~Inclusion I2 and I4; or

   4.2.1.2. A Blackstart Resource, identified in the BES definition, ~~inclusion~~Inclusion I3.

5. **Effective Date:** See Implementation Plan for Project ~~2021-07 Phase 2~~2024-03.

B. Requirements and Measures

R1. At least once every five (5) calendar years, each Generator Owner shall, for each of its applicable generating unit(s): [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]

1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable generating unit(s) and identify the calculation date ~~and~~, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, if necessary; and

1.1.1. If the ~~re-calculated~~recalculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation. ~~If~~, and if new corrective actions are needed to provide the required operational capability ~~under~~described in Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) calendar months of the recalculation.

1.2. Identify generating unit(s) cold weather data, to include:

1.2.1. Generating unit(s) operating limitations in cold weather to include:

1.2.1.1. Capability and availability;

1.2.1.2. Fuel supply and inventory concerns;

1.2.1.3. Start-up issues;

1.2.1.4. Fuel switching capabilities; and

1.2.1.5. Environmental constraints.

1.2.2. Generating unit(s) minimum:

- Design temperature, and if available, the concurrent wind speed and precipitation;
- Historical operating temperature at least one hour in duration, and if available, the concurrent wind speed and precipitation; or
- Current cold weather performance temperature determined by an engineering analysis, which includes the concurrent wind speed and precipitation.

M1. Each Generator Owner will have evidence documenting its Extreme Cold Weather Temperature calculation, including the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, and design information, operating data, or engineering analysis that supports its generating unit minimum temperature.

R2. Applicable to generating units ~~with a~~that begin commercial operation ~~date~~ [1] on or after October 1, 2027[2]: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),~~1~~[3] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or
- ~~Develop a Corrective Action Plan(s) to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours.~~
- Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R2, or it has ~~developed a Corrective Action Plan~~declared a Generator Cold Weather Constraint for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature under Requirement R1 Part 1.2.2 which is equal to or less than the generating unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and ~~Corrective Action Plan(s~~Generator Cold Weather Constraints (if applicable).

R3. Applicable to generating unit(s) in commercial operation prior to October 1, 2027:[4] Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a

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[1] Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing.

[2] In non-U.S. jurisdictions, this will be the date established by the Applicable Governmental Authority.

~~1~~[3] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[4] In non-U.S. jurisdictions, this will be the date established by the Applicable Governmental Authority.

temperature of 32 degrees Fahrenheit (zero degrees Celsius),[~~2~~5] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature; or
- Develop a Corrective Action Plan to add new or modify existing freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature.

M3. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R3, or it has developed a Corrective Action Plan for the identified issues. Acceptable evidence may include, but is not limited to, the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature per Part 1.2.2 which is equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and Corrective Action Plan(s).

R4. Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness plan(s) shall include the following, at a minimum: *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. The lowest calculated Extreme Cold Weather Temperature for each generating unit, as determined in Requirement R1;[~~3~~6]

4.2. The generating unit cold weather data, as determined in Requirement ~~R1.2~~R1, Part 1.2;

4.3. Documentation identifying Generator Cold Weather Critical Components;

4.4. Documentation of freeze protection measures implemented on Generator Cold Weather Critical Components ~~which~~that includes measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain); ~~and~~

4.5. Annual inspection and maintenance of generating unit(s) freeze protection measures implemented on Generator Cold Weather Critical Components.

M4. Each Generator Owner will have evidence documenting that its cold weather preparedness plan(s) was implemented and maintained in accordance with

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[~~2~~5] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[~~3~~6] Generator Owners shall include the lowest calculated Extreme Cold Weather Temperature for the unit, even where subsequent periodic re-calculations under Requirement R1 Part 1.1 cause an increase in the Extreme Cold Weather Temperature.

Requirement R4. Examples of documentation to demonstrate a cold weather preparedness plan may include existing operating procedures, plans, checklists, or processes. Examples of documentation, to demonstrate inspections and maintenance have been completed, may include, but are not limited to, completed work order(s) from the Generator Owner's work management system and/or freeze protection checklists identifying the measures inspected and maintained for the Generator Cold Weather Critical Components.

R5. Each Generator Owner, in conjunction with its Generator Operator, shall identify the entity responsible for providing ~~the~~ generating unit-specific training, and that identified entity shall provide annual training to ~~its~~the maintenance ~~or~~and operations personnel, as applicable, responsible for implementing the cold weather preparedness plan(s) developed pursuant to Requirement R4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*

M5. Each Generator Operator or Generator Owner will have documented evidence that the applicable personnel completed annual training of the Generator Owner's cold weather preparedness plan(s). This evidence may include, but is not limited to, documents such as personnel training records, training materials, date of training, agendas or learning objectives, attendance at pre-work briefings, review of work order tasks, tailboards, attendance logs for classroom training, and completion records for computer-based training in fulfillment of Requirement R5.

R6. Each Generator Owner shall, ~~for each~~after experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[4][7] develop and implement[8] a Corrective Action Plan ~~when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed within 150 days or by July 1, whichever is earlier, and contain at a minimum~~(s) to address identified freezing issues as follows: *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

6.1. The Generator Owner shall develop a Corrective Action Plan for the generating unit that experienced a Generator Cold Weather Reliability Event no later than prior to the first day of the first December following the Generator Cold Weather Reliability Event.[9]

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[4][7] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[8] If a Generator Owner has previously experienced a Generator Cold Weather Reliability Event and developed a Corrective Action Plan for the generating unit or units under Requirement R6 Parts 6.1 or 6.2, the Generator Owner may review and update its existing plan(s) in lieu of developing a new plan.

[9] For events that occur in September, October, or November, the timetable shall specify completion prior to December 1 of the following calendar year.

6.2. The Generator Owner shall conduct a review of other generating unit(s) in its fleet with the same or similar equipment as the affected generating unit to determine if any of those generating unit(s) are susceptible to the identified freezing issues. If corrective actions are needed, the Generator Owner shall develop or update a Corrective Action Plan to address the other generating unit(s). This review and, if applicable, the development or update of any Corrective Action Plan(s), shall be completed no later than 12 calendar months following the Generator Cold Weather Reliability Event.

6.3. For each Corrective Action Plan, the Generator Owner shall include at a minimum:

~~**6.1**~~**6.3.1.** A summary of the identified cause(s) ~~for~~of the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;

~~**6.2.** A review of applicability to similar equipment at generating units owned by the Generator Owner; and~~

6.3.2. A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures;

~~**6.3**~~**6.3.3.** An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until ~~execution~~implementation of the corrective action(s) identified in the Corrective Action Plan~~.~~ is completed;

6.3.4. A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required; and

6.3.5. A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows:

6.3.5.1. For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.[10]

6.3.5.2. For other generating unit(s) owned by the Generator Owner, within 24 calendar months of completing the review required in Part 6.2, or no later than 36 calendar months following the Generator Cold Weather Reliability Event.

6.4 If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance

[10] For events that occur in September, October or November, the timetable shall specify completion prior to December 1 of the following calendar year.

Enforcement Authority (CEA) for approval. The submitted Corrective Action Plan extension request shall include the following:

6.4.1. An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner;

6.4.2. Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and

6.4.3. Updated timetable for implementing the selected actions in Part 6.3.2.

6.5 The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, as applicable.

M6. Each Generator Owner will have ~~documented~~dated evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event ~~at an~~for applicable unit(s) in accordance with Requirement R6. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s) ~~and~~, completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraint(s).

R7. Each Generator Owner~~, for each~~ that is required to develop a Corrective Action Plan ~~developed pursuant to~~under Requirements R1~~, R2~~, R3, or ~~R6, shall~~R9 shall develop and implement the Corrective Action Plan in accordance with the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

7.1. ~~Include a timetable for implementing the selected corrective action(s) that shall~~For each Corrective Action Plan, the Generator Owner shall include at a minimum the following:

7.1.1. ~~List the action(s) which address(es) existing equipment or~~A list of any actions that require new freeze protection measures, ~~if any, to be completed~~with a timetable specifying completion of such measures within ~~24~~48 calendar months of completing development of the Corrective Action Plan;

~~**7.1.2.** List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar months of completing development of the Corrective Action Plan; and~~

7.1.2. A list of any actions that remedy issues with existing freeze protection measures with a timetable specifying completion of such measures within 24 calendar months of completing development of the Corrective Action Plan (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures);

7.1.3. ~~List the~~A description of updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; and

~~**7.2.** Implement the Corrective Action Plan in accordance with the specified timetables in Requirement R7 Part 7.1;~~

~~**7.3.** Update the Corrective Action Plan action(s) and timetable(s), with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and~~

7.1.4. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed.

7.2. If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R7 Part 7.1 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following:

7.2.1. An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.2.2. Revisions to the selected actions in Parts 7.1, if any, including utilization of operating procedures, if applicable; and

7.2.3. Updated timetable for implementing the selected actions in Part 7.1.

~~**7.4.** Document~~**7.3.** The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint ~~that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan~~in accordance with Requirement R8.

M7. Each Generator Owner shall have dated evidence that ~~demonstrates it~~it developed and implemented ~~each~~a Corrective Action Plan~~, including updating actions or timetables, or has explained in a declaration why corrective actions are not being implemented~~ for applicable unit(s) in accordance with Requirement ~~R8~~R7. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): ~~records that document the implementation of each~~ Corrective Action Plan~~ and the completion of actions for each~~(s), completed work orders, copies of any Corrective Action Plan ~~including revision history of each Corrective Action Plan and, if applicable, justification to support any changes to corrective action(s) identified in the Corrective Action Plan or timetables exceeding the timelines in Requirement R7 Part 7.1. For each Corrective Action Plan applying to multiple generating units, the timetable shall reflect implementation at each unit addressed in the Corrective Action~~

~~Plan. Evidence may also include work management program records, work orders, and maintenance records. Any declaration shall contain dated documentation to support constraints identified by the Generator Owner.~~extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraints.

R8. Each Generator Owner that ~~creates~~declares a Generator Cold Weather Constraint ~~declaration~~in accordance with Attachment 1 shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

8.1. ~~Review the~~Submit its Generator Cold Weather Constraint declaration ~~at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and~~ (s) to the CEA as follows:

- For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or
- For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable.

8.2. Update the operating limitations ~~associated with capability and availability~~ under Requirement R1 Part R1.2 if applicable~~.~~;

8.3. If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2;

8.4. Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event with the same cause of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause is addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit.

M8. Each Generator Owner shall have dated evidence that demonstrates it performed the ~~review and updated operating limitations as needed~~actions in accordance with Requirement R8. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): a copy of the Generator Cold Weather Constraint declaration, evidence the declaration was provided to the CEA in accordance with the specified timeframe, records that document ~~the performance of the review and~~ update(s) to the operating limitations, as needed, updates to the Corrective Action Plan(s), if applicable, and documentation and notice to the CEA of subsequent Generator Cold Weather Reliability Events, if applicable.

R9. The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

9.1 If a Generator Cold Weather Constraint is determined to be no longer valid, then within six (6) calendar months of such determination, the Generator Owner shall develop or update a Corrective Action Plan pursuant to Requirement R7.

M9. Each Generator Owner shall have dated evidence that demonstrates it reviewed Generator Cold Weather Constraints in accordance with Requirement R9. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the performance of the review within the required timeframe, records that demonstrate that a Corrective Action Plan was developed or updated within the required timeframe (if applicable).

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" (CEA) means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation.

- The Generator Owner shall retain data or evidence to support its current Extreme Cold Weather Temperature calculation and generating unit cold weather data, plus each calculation or revision since the last audit, for Requirement R1 and Measure M1.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R2 or R3 is complete, whichever timeframe is greater, for Requirements R2 and R3 and Measures M2 and M3. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall retain the current cold weather preparedness plan(s), as evidence of review or revision history, plus each version issued since the last audit and evidence of compliance since the last audit for Requirement R4 and Measure M4.
- The Generator Owner or Generator Operator shall keep data or evidence to show compliance for three years for Requirement R5 and Measure M5.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extensions (if applicable), under Requirement R6 is complete, whichever timeframe is greater, for Requirement R6 and Measure M6. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extension (if applicable), under Requirement R7 is complete, whichever ~~time~~

~~frame~~timeframe is greater, for Requirement R7 and Measure M7. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.

- The Generator Owner shall maintain data or evidence to support its current Generator Cold Weather Constraint declaration(s), plus each revision since the last audit, for Requirement R8 and Measure M8.
- The Generator Owner shall maintain data or evidence to support that it reviewed each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months since the last audit, for Requirement R9 and Measure M9.

1.3. Compliance Monitoring and Enforcement Program: ~~As defined in~~"Compliance Monitoring Enforcement Program" or "CMEP" means, depending on the context (1) the NERC ~~Rules of Procedure, "~~Compliance Monitoring and Enforcement Program~~" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated~~ (Appendix 4C to the NERC Rules of Procedure) or the Commission-approved program of a Regional Entity, as applicable, or (2) the program, department or organization within NERC or a Regional Entity that is responsible for performing compliance monitoring and enforcement activities with respect to Registered Entities' compliance with Reliability ~~Standard~~Standards.

1.4. Compliance Abeyance Period: From the effective date of Reliability Standard EOP-012-3 until October 1, 2027, the CEA will not pursue an action under Sections 4A.0 or 5.0 of Appendix 4C to the Rules of Procedure for a failure to comply with Reliability Standard EOP-012-3 Requirement R1 Part 1.1 with respect to the calculation of the Extreme Cold Weather Temperature for an applicable generating unit, or any other failure to comply resulting from an incorrect calculation of the Extreme Cold Weather Temperature for that generating unit, against any entity acting in good faith to comply with the standard in accordance with the relevant implementation plan. "Good faith" in this context refers to a sincere intention to comply with Reliability Standard EOP-012-3 regarding all requirements based on the calculation of the Extreme Cold Weather Temperature for each applicable generating unit, following a reasonable and serious assessment by the entity in determining how this Reliability Standard should be applied to its particular facts and circumstances. Entities shall participate in any compliance monitoring activities undertaken by the CEA during this abeyance period and submit documentation as requested.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.
R2.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not ~~develop a Corrective Action Plan~~declare a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not ~~develop a Corrective Action Plan~~declare a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not ~~develop a Corrective Action Plan~~declare a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not ~~develop a Corrective Action Plan~~declare a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R3.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for 5% or less of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 20% of its applicable units.
R4.	The Generator Owner implemented a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable ~~Parts~~parts within Requirement R4.	The Generator Owner ~~had and~~ maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.
R5.	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • one applicable personnel ~~at~~for a single generating unit; or • 5% or less of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • two applicable personnel ~~at~~for a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • three applicable personnel ~~at~~for a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • four or more applicable personnel ~~at~~for a single generating unit; or • more than 15% of its total applicable personnel.
R6.	The Generator Owner ~~developed a Corrective Action Plan, but not within 150 days or by July 1 as required in Requirement R6~~conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 12 but fewer than 15 calendar months after the Generator Cold Weather Reliability Event.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 15 but fewer than 18 calendar months after the Generator Cold Weather Reliability Event. OR The Generator ~~Owner's~~Owner developed and implemented a Corrective Action Plan where required under Requirement R6, but it failed to ~~comply~~	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 18 but fewer than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator ~~Owner's~~Owner developed and implemented a Corrective Action Plan where required under Requirements R6, but it failed to ~~comply~~	The Generator Owner failed to develop a Corrective Action Plan where required under Requirement R6. OR The Generator Owner developed a Corrective Action Plan where required under Requirement R6, but failed to implement it. OR The Generator Owner failed to conduct a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		~~with~~contain one of the elements in Requirement R6, ~~Parts 6.1 through~~Part 6.3.	~~with~~contain two of the elements in Requirement R6, ~~Parts 6.1 through~~Part 6.3. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable), but it did not include one of the required elements.	Requirement R6, Part 6.2, or the Generator Owner conducted the review, but it was conducted more than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator ~~Owner's~~Owner developed and implemented a Corrective Action Plan, but failed to ~~comply with~~contain three or more of the elements in Requirement R6, ~~Parts 6.1 through~~Part 6.3. OR The Generator Owner exceeded the timetables specified for completion in Requirement R6, Part 6.3.5, but did not ~~develop~~submit a Corrective Action Plan~~, as required by~~ extension request in accordance with Requirement R6~~.~~, Part 6.4 (if applicable). OR

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.4 (if applicable), but it did not include two or more of the elements in Requirement R6, Part 6.4. OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s), in accordance with Requirement R6, Part 6.5.
R7.	~~The Generator Owner implemented a Corrective Action Plan, but failed to update the Corrective Action Plan when corrective action(s) changed in accordance with Requirement R7.~~N/A	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include a ~~timetable for implementing the selected corrective actions meeting the criteria of~~description of updates to the cold weather preparedness	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to ~~implement the~~ include one of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include two or more of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		plan and identification of operating limits as required in Requirement R7 ~~Part 7.1~~, Parts 7.1.3 and 7.1.4.	The Generator Owner submitted a Corrective Action Plan ~~within the specified timetable or failed to update the Corrective Action Plan, with justification, when timetable(s) exceeded the timelines in Requirement R7 Part 7.1.~~ extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include one of the required elements.	The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include two or more of the required elements. OR The Generator Owner failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable). OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan ~~or failed to~~, and did not document in a declaration ~~why corrective actions are not being implemented~~any Generator Cold Weather Constraint(s) in accordance with Requirement R7 Part 7.3.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R8.	~~N/A~~The Generator Owner declared a Generator Cold Weather Constraint and submitted it to the CEA but it did not do so within the timeframe provided in Requirement R8 Part 8.1.	~~N/A~~The Generator Owner declared a Generator Cold Weather Constraint, but failed to update its operating limitations as required under Requirement R8, Part 8.2 (if applicable).	The Generator Owner ~~failed to comply with one of the elements in~~declared a Cold Weather Constraint, but failed to update its Corrective Action Plan following a determination by the CEA that the constraint is invalid in accordance with Requirement R8~~, Parts 8.1 through 8.2~~. Part 8.3 (as applicable). OR The Generator Owner failed to document and provide the required notice to the CEA under Requirement R8 Part 8.4 (if applicable).	The Generator Owner declared a Generator Cold Weather Constraint but failed to submit it to the CEA. OR The Generator Owner failed to ~~comply with all of the elements in~~implement freeze protection measures to provide the necessary capability in accordance with Requirement R8~~, Parts 8.1 through 8.2~~. Part 8.3.
R9.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 36 but fewer than 38 calendar months after CEA	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 38 but fewer than 40 calendar months after CEA	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 40 but fewer than 42 calendar months after CEA	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9, but this review was performed more than 42 calendar months after CEA validation or after the

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	validation or after the previous Generator Owner review.	validation or after the previous Generator Owner review.	validation or after the previous Generator Owner review.	previous Generator Owner review. OR The Generator Owner failed to review a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9. OR The Generator Owner failed to develop or update a Corrective Action Plan where required by Requirement R9, Part 9.1 (if applicable).

D. Regional Variances

None.

E. Associated Documents

Implementation Plan

Calculating Extreme Cold Weather Temperature

EOP-012-3 Technical Rationale

Generator Cold Weather CAP Extension and Constraint Process

Attachment 1

Generator Owners shall determine the applicability of a Generator Cold Weather Constraint declared under Requirements R2, R6, and R7 using the criteria as described below.

The definition of a Generator Cold Weather Constraint is: "Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would be expected to result in improved generating unit performance during cold temperatures."

A Generator Cold Weather Constraint can be identified using the following criteria:

Known Generator Cold Weather Constraints

The following are circumstances which, if present and confirmed as valid by the CEA, will constitute known Generator Cold Weather Constraints:

- Individual wind turbine towers manufactured prior to October 1, 2029 that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1 for generating units that began commercial operation prior to October 1, 2031.
- Application of freeze protection measures to meet the requirements of this Standard that require:
  - Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities;
  - Removal of accumulated frozen precipitation on solar panels;
  - Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters; or
  - Implementation of heat tracing or other de-icing technologies for wind turbine blades, that, through analysis, have been shown to not be effective or not made available by the OEM for generating units of a comparable types in regions that experience similar winter climate conditions.

Case-by-case Determinations of Generator Cold Weather Constraints

The following situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the CEA will these circumstances constitute a valid Generator Cold Weather Constraint:

1. The implementation of a specific freeze protection measure will void an equipment warranty.
2. The implementation of a specific freeze protection measure would exceed a manufacturer's design limitation and the exceedance is expected to functionally impair or degrade the effective operation of the impacted component or system.

3. The implementation of a specific freeze protection measure is precluded by technical or physical limitations. For example:
    a. Installing wind breaks around a cooling tower or air-cooled heat exchanger that requires free airflow for its functionality;
    b. Implementing freeze protection measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system;
    c. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.
4. A determination, through an analysis, that the freeze protection measure would not be effective for the generating unit. Such a determination may be supported, for example, by fleet or industry operating experience (or lack thereof) with the freeze protection measure on generating unit(s) of comparable types in regions that experience similar winter climate conditions.
5. A determination, through an analysis, that the implementation of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:
    a. The implementation of freeze protection measures, while feasible, would result in the accelerated premature retirement of an existing generating unit with no acceptable replacement available within the accelerated timeframe (must be accompanied by an attestation signed by an officer of the company);
    b. The implementation of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit (must be accompanied by an attestation signed by an officer of the company);
    c. The implementation of freeze protection measures would reduce the generating unit's ability to provide Real Power or Reactive Power capability by more than three percent, or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.), when freeze protection measures are not in use; or
    d. The implementation of freeze protection measures would reduce the summer net dependable capacity[1], or net dependable capacity at Peak Demand, of the generating unit by more than three percent or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.);
    e. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.

[1] "net dependable capacity" refers to the definition used for reporting to the NERC in Generating Availability Data System (GADS) appropriate for the generation type.

6. The implementation of new freeze protection measures to an existing generating unit that has previously communicated a retirement date to the appropriate functional entity (e.g., Transmission Planner (TP), Reliability Coordinator (RC), Balancing Authority (BA), etc.) that falls within three calendar years of the Generator Cold Weather Constraint declaration;
7. The implementation of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.
8. A determination through an analysis that the freeze protection measure is not available on the commercial market for generating units of comparable types in regions that experience similar winter climate conditions.
9. Implementation of freeze protection measures would not increase reliability of a generating unit due to clearly delineated technical or physical reasons on fuel supply which has been communicated to its Reliability Coordinator (RC) or Balancing Authority (BA) and are not due to Fixed Fuel Supply Components, and which are outside the Generator Owner's control.
10. Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Generator Cold Weather Critical Components.

An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

Version History

Version	Date	Action	Change Tracking
1	October 1, 2022	Drafted by Project 2021-07.	New
2	February 16, 2023	Revisions drafted by Project 2021-07 due to FERC Order and inquiry Recommendations.	Revisions
2	February 15,2024	Board Adopted.	
2	June 27, 2024	FERC Approved.	
3	April 4, 2025	Drafted by Project 2024-03, Revised by the Standards Committee under Section 321 of the NERC Rules of Procedure.	As directed by the June 2024 FERC Order

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Exhibit B
Implementation Plan

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Implementation Plan

Project 2024-03 Revisions to EOP-012-2
Reliability Standard EOP-012-3

Applicable Standard(s)

- EOP-012-3 Extreme Cold Weather Preparedness and Operations

Requested Retirement(s)

- EOP-012-2 Extreme Cold Weather Preparedness and Operations

Applicable Entities

- Generator Owner (GO)
- Generator Operator (GOP)

Background

The purpose of Project 2024-03 is to address the directives identified by FERC in its June 27, 2024, order approving Reliability Standard EOP-012-2 and directing further modifications. *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61,204 (2024) (June 2024 Order), available here. In that order, FERC found that further improvements are needed to address ambiguous language and other reliability gaps/implementation issues in the standard and related definitions to fully address issues first raised in the Commission's February 2023 Order approving EOP-012-1. *See N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094, PP 3-11 (2023) (February 2023 Order); *reh'g denied*, 183 FERC ¶ 62,034, *order on reh'g*, 183 FERC ¶ 61,222 (2023). In the June 2024 Order, FERC directed that NERC submit the modifications within nine months of the date of the order, or by March 27, 2025.

Proposed EOP-012-3 Requirement R1 is an existing EOP-012-2 requirement that consolidated and clarified requirements for each GO to calculate the Extreme Cold Weather Temperature for its generating unit location(s) and identify generating unit cold weather data, and to review these calculations and data every five years. Proposed EOP-012-3 Requirement R4 and R5 continue the current requirements under EOP-012-2 (with minimal clarifications in Requirement R4), that all GOs develop cold weather preparedness plans and that all GOs or GOPs (as appropriate) conduct annual training on those plans. Proposed EOP-012-3 clarifies which generating unit(s) are subject to the winter operations capability requirements of the standard (Requirements R2 and R3). Proposed EOP-012-3 Requirement R6 provides clarification regarding responses to a Generator Cold Weather Reliability Event that may require Corrective Action Plans (CAPs). Proposed EOP-012-3 Requirement R7 specifies timelines for the completion of CAPs, consistent with the February 2023 Order and FERC directives in its June 2024 Order. The drafting team crafted language to meet the concern of GOs regarding timelines for units under consideration or development. The language reflects

FERC's concern regarding applicability of CAPs to the correct GO. Proposed EOP-012-3 Requirement R9 requires GOs to review constraint declarations at least every 36 calendar months, or as needed, when a change of status occurs and ensures operating limitations caused by the constraints are clearly identified. The revised *Glossary* term for Generator Cold Weather Constraint, and new Attachment 1 both clarify the circumstances under which GOs may declare Generator Cold Weather Constraints.

For additional information on the FERC Order directives addressed in proposed Reliability Standard EOP-012-3, see the Consideration of Directives available on the Project 2024-03 project page.

General Considerations

This implementation plan reflects past consideration that entities need time to develop, implement, and maintain cold weather plans, identify Generator Cold Weather Critical Components, and identify freeze protection measures. The implementation plan also considers the FERC directives regarding the need for an accelerated effective date of directed changes and abbreviated implementation periods for generator winterization measures. FERC has repeatedly expressed an urgency in completing cold weather Reliability Standards and having them implemented in a timely manner to address the risks cold weather events present to the reliability of the Bulk-Power System. FERC noted the five core directives to NERC in the June 2024 Order are not new issues, but rather targeted modifications necessary to fully address issues identified in FERC's prior February 2023 Order. *See* June 2024 Order at P 30.

The drafting team determined that later phased-in compliance dates were not necessary for the revised requirements in EOP-012-3, as the practical impact of implementing the proposed changes, in light of the regulatory history described above, is not expected to be significant:

- For revised Requirement R2, units further into design or construction have separate requirements from those units in the early phases of design: the units further along in the design/construction phase are allowed to develop, implement, and complete CAPs to meet the more rigorous requirements for new generating units, whereas units in the early stages of design are expected to meet the more rigorous requirements unless a Generator Cold Weather Constraint applies. Additional time is not needed to implement this change.
- For revised Requirement R6, relating to Generator Cold Weather Reliability Events, the language reflects the FERC directives regarding CAPs, CAP extensions, and consideration of the applicability of corrective actions across a fleet for Generation Owners that had a generating unit(s) that experienced a Generator Cold Weather Reliability Event. Additional time to implement these changes is not needed, given the conditions in which a CAP Plan may be needed for a Generator Cold Weather Reliability Event.
- For revised Requirement R7, the drafting team clarified the applicability of CAP requirements and provided CAP extension request language similar to that found in

Reliability Standard TPL-007-4 to address the June 2024 Order. Additional guidance is provided below.

In consideration of these factors, and to ensure entities have sufficient notice of their revised obligations under Reliability Standard EOP-012-3, the proposed implementation plan provides that the standard shall become effective on the later of October 1, 2025, which is the date Reliability Standard EOP-012-2 will be fully enforceable in the United States, or three months following regulatory approval.

Additional guidance is provided to aid in the orderly implementation of the standard as entities transition from compliance with Reliability Standard EOP-012-2 to Reliability Standard EOP-012-3.

Effective Date

The effective dates for the proposed Reliability Standards are provided below. Where the drafting team identified or recognized the need for a longer implementation period for compliance with a particular section of a proposed Reliability Standard (i.e., an entire Requirement or a portion thereof), the additional time for compliance with that section is specified below. The phased-in compliance date for those particular sections represents the date that entities must be compliant with that particular section of the Reliability Standard, even where the Reliability Standard goes into effect at an earlier date.

EOP-012-3 and Definitions

Where approval by an applicable governmental authority is required, the standard and associated definitions shall become effective on the later of: (1) October 1, 2025; or (2) the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.

Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

Additional Implementation Information and Phased-In Compliance Date

This section provides additional information of Reliability Standard EOP-012-3 in the United States. In non-U.S. jurisdictions that have not adopted prior versions of the standard or have established different dates for Requirement R2 or R3, entities shall implement the standard with dates appropriate to their jurisdiction, or as directed by the Applicable Governmental Authority.

EOP-012-3 Requirement R1

In the United States, entities were required to become compliant with Requirement R1 by the effective date of EOP-012-2 (October 1, 2024) in accordance with that implementation plan. Entities shall perform their first periodic review under Reliability Standard EOP-012-3 Requirement R1 by no more than 60 months after the effective date of **EOP-012-2**.[1]

EOP-012-3 Requirement R2 – New Generating Units entering commercial operation on/after October 1, 2027

Entities shall become compliant with Requirement R2 no later than the commercial operations date for the applicable unit, except as provided below. Any Generator Cold Weather Constraint shall be submitted in accordance with the timeline provided in Requirement R8.

For generating units for which the GO first contractually committed[2] to design criteria relevant to this Requirement before June 29, 2023, and which enter commercial operation between October 1, 2027 and March 31, 2028, the GO shall comply with Requirement R2 relating to implementing required capability by no later than April 1, 2028. If declaring a Generator Cold Weather Constraint, the Generator Cold Weather Constraint shall be submitted in accordance with the timeline provided in Requirement R8.

EOP-012-3 Requirement R3 – Existing and New Generating Units entering commercial operation before October 1, 2027

Entities beginning commercial operation after the effective date of EOP-012-3 shall become compliant with Requirement R3 no later than the commercial operations date for the applicable unit.

EOP-012-3 Requirement R8

Entities shall review all Generator Cold Weather Constraints previously declared under Reliability Standard EOP-012-2 for compliance with Reliability Standard EOP-012-3 Attachment 1 by the effective date. Each entity shall submit any previously declared Generator Cold Weather Constraints to the Compliance Enforcement Authority (CEA) no later than 45 days following the effective date of Reliability Standard EOP-012-3. Newly declared Generator Cold Weather Constraints shall be submitted in accordance with the timelines specified in Requirement R8.

EOP-012-3 Requirement R9

If applicable, entities shall review each Generator Cold Weather Constraint in accordance with Requirement R9 no later than 36 calendar months following validation by the CEA.

[1] In jurisdictions where EOP-012-2 has not become effective, entities shall perform their first periodic review under Reliability Standard EOP-012-3 Requirement R1 by no later than five calendar years following the initial calculation of the Extreme Cold Weather Temperature, or as directed by the applicable governmental authority in the jurisdiction.

[2] Such commitments would be demonstrated by signed contracts creating a binding legal agreement with respect to the design criteria for the unit.

Retirement Date of EOP-012-2

Reliability Standard EOP-012-2 shall be retired immediately prior to the effective date of Reliability Standard EOP-012-3 in the particular jurisdiction in which the revised standard is becoming effective.

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Exhibit C
EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process

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EOP-012-3

Generator Cold Weather CAP Extension and Constraint Process

Purpose

This Electric Reliability Organization (ERO) Generator Cold Weather Corrective Action Plan (CAP) Extension and Constraint Process document addresses how ERO Enterprise staff will review generator cold weather CAP extensions and Constraints developed under Reliability Standard EOP-012-3 Requirements and Attachment 1. The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.

NERC Compliance Assurance & Certification will maintain this document under existing ERO Enterprise processes. This document will be reviewed and updated by NERC Compliance Assurance & Certification, as needed. Notification to industry on changes will occur through The North American Electric Reliability Corporation's (NERC's) normal public posting and industry announcements to maintain industry awareness. The steps outlined here will help to ensure a timely, structured, and consistent approach to CAP extension request and Generator Cold Weather Constraint submittals and processing.

Each Compliance Enforcement Authority (CEA) is responsible for providing staff to facilitate timely processing in a consistent manner. NERC Compliance Assurance & Certification will provide training, oversight, and guidance, as needed, for successful implementation of this process. A templated submittal form as well as guidance on materials that support timely and consistent processing will be provided in the appropriate format (e.g., training, outreach, guides, etc.).

CAP Extension Request Review Process

Process Overview

If a registered entity has determined that a CAP developed in accordance with EOP-012-3 Requirements R6 or R7 cannot meet the timetable provided per R6 Part 6.3 or R7 Part 7.1, then the entity will submit an extension request to the ERO Enterprise for approval no less than 60 calendar days prior to the original required CAP completion date[1]. It is the Generator Owner's (GO's) obligation and responsibility to provide clear documentation with the extension request in a timeframe that allows the ERO Enterprise to process the request effectively.

The entity will work with the Regional Entity designated as its CEA as outlined in this process. The entity submitting the extension request will be referred to as the 'submitting entity' and may represent only itself or multiple registered entities who have developed a joint extension request[2]. The submitting entity is

[1] The ERO Enterprise is aware that in certain situations the submittal timeframes may not be met due to circumstances beyond the control of a Generator Owner. The ERO Enterprise will prioritize efforts to help ensure timely processing of extension requests as these circumstances arise.

[2] As a single Corrective Action Plan may be developed for multiple sites and multiple entities, a Corrective Action Plan extension request may be done in a similar manner.

responsible for ensuring all registered entities jointly submitting the extension request are listed in the requested information below and for distributing any communications from its CEA to the other entities that are part of the joint extension request. If a joint extension request is submitted for multiple registered entities who have different Regional Entities designated as the CEA, the submitting entity's CEA will perform the steps outlined in this process and will be responsible for coordinating with the Regional Entity(ies) that are the designated CEA for the additional entities party to the joint extension request.

For entities in Coordinated Oversight, the CEA for this process is the Lead Regional Entity (LRE). The LRE will coordinate with the Affected Regional Entity(ies) (ARE) and the AREs may participate in the joint review as well.

Step 1 – Registered Entity Submittal

If an entity determines that it cannot meet the required timetable for completing a CAP, the submitting entity will submit the requisite data to their CEA through Align and the Secure Evidence Locker (SEL) or other process tools as directed by the CEA. It is expected that data will be marked in accordance with Section 1500 of the Rules of Procedure in a similar manner to the evidence provided during a Compliance Audit.

Entities are encouraged to submit the extension request as soon as they are aware they will not meet the CAP completion date, but no later than 60 calendar days before the original required completion date. The 60-day timeframe provides the submitting entity and the CEA sufficient time to have discussions, as needed, prior to the required completion date. It is the submitting entity's responsibility to ensure that all information detailed in EOP-012-3 Part 6.4 or Part 7.2 and requested in Align is provided in the entity's extension request to facilitate the review.

Step 2 – ERO Enterprise Review

The CEA will acknowledge receipt of the submission in writing (either through Align or email) within 15 calendar days and verify that all information detailed in EOP-012-3 Part 6.4 or Part 7.2 is provided in the submittal. The CEA will work with the submitting entity to provide any missing information. The CEA will notify NERC of the extension request submittal and provide all associated information when acknowledging receipt of the submission.

The CEA will then perform a review[3] of (1) the circumstances beyond the control of the entity preventing implementation of the CAP within the identified timetable; (2) the revisions to the selected actions in the CAP; and (3) the updated timetable for implementing the selected actions. Any additional information requested to support the extension request review will be coordinated with the submitting entity by the CEA. The CEA will complete the review within 45 calendar days of acknowledgement or provide notification to the submitting entity that they are extending the time needed for review.

Examples of circumstances beyond the control of the responsible entity include, but are not limited to[4]:

[3] NERC may choose to participate in any review at its own discretion or at the request of the CEA.

[4] The list provided is not exhaustive. Clear explanation of the facts and circumstances that demonstrate "beyond the control" is needed. The concept of "beyond the control" is also used in Reliability Standards FAC-003 Requirements R1 and R7, PRC-004 Requirement R5, TPL-001-5.1 Requirement R2, and TPL-007 Requirements R7 and R11.

- Delays resulting from regulatory/legal processes, such as permitting.
- Delays resulting from stakeholder processes required by tariff.
- Delays resulting from equipment lead times; or
- Delays resulting from unit outages being denied.

Due diligence (i.e., reasonable steps taken) in ordering equipment, obtaining permits, scheduling outages, etc., will be considered as part of the determination of whether a particular set of facts constitute circumstances beyond the control of the entity.

Step 3 – Registered Entity Notification

The CEA will communicate the approval or denial of the extension request or continuation of the time needed to review the extension request in writing to the submitting entity including the rationale for the determination. For any continuation of the review, the CEA will also provide the submitting entity with a revised timeline for when the determination will be provided. If an extension request is denied, the selected actions in the CAP need to be completed in accordance with the original timetables.

If a CAP extension request was denied, the submitting entity may request, within 15 calendar days of denial, a joint NERC and CEA review of the denial. The joint review should take no longer than 10 calendar days (subject to the information and resources available.) NERC and the CEA will evaluate the information provided and the submitting entity will be notified of the determination.

Step 4 – Reporting to NERC

Quarterly, the CEA will provide NERC with a report that, at a minimum, includes each extension request, whether the request was approved or denied, and the CEA's rationale for its decision. NERC will periodically provide trending and analysis of aggregated anonymized CAP extension requests for industry awareness and guidance.

Constraint Review Process

Process Overview

If a registered entity has determined that a Generator Cold Weather Constraint, developed in accordance with Reliability Standard EOP-012-3 Attachment 1, exists, the entity will work with the Regional Entity designated as its CEA to submit the Generator Cold Weather Constraint, with supporting documentation, to the CEA for review, evaluation, and validation or approval as outlined in this process.

The entity submitting the Generator Cold Weather Constraint(s) will be referred to as the 'submitting entity' and may represent itself or multiple registered entities under the same ownership with the same Generator Cold Weather Constraint. The submitting entity is responsible for ensuring all registered entities included are listed in the requested information and is for distributing any communications from its CEA to the other entities that are part of the Generator Cold Weather Constraint. If a Generator Cold Weather Constraint is submitted for multiple registered entities under the same ownership who have different Regional Entities designated as the CEA, the submitting entity's CEA will perform the steps outlined in this process and will

be responsible for coordinating with the Regional Entity(ies) that are the designated CEA for the additional entities party to the Generator Cold Weather Constraint.

For entities in Coordinated Oversight, the CEA for this process is the Lead Regional Entity (LRE). The LRE will coordinate with the Affected Regional Entity(ies) (ARE) and the AREs may participate in the joint review as well.

Step 1 – Registered Entity Submittal

If an entity determines that it meets the required Generator Cold Weather Constraint language within Attachment 1, the submitting entity will submit the requisite data to their CEA through Align and the Secure Evidence Locker or other process tools as directed by the CEA. It is expected that data will be marked in accordance with Section 1500 of the Rules of Procedure in a similar manner to the evidence provided during a Compliance Audit.

Entities are encouraged to submit the Generator Cold Weather Constraint as soon as they are aware they will meet the Generator Cold Weather Constraint language within Attachment 1 but are required to meet EOP-012-3 Requirement R8[5]. Early submittal is requested to allow the CEA time to review, evaluate, and validate or approve the Generator Cold Weather Constraint.

If an entity determines a Generator Cold Weather Constraint is required for a unit, then subsequently has another unit that requires declaration of the same Generator Cold Weather Constraint (e.g., the same issue occurred at another location with implementing a freeze protection measure) an update to the original Generator Cold Weather Constraint is allowed. Note that supporting information for the other site is needed and the submittal/review timelines (per Requirement R8 and this process) will remain the same for the "new" addition. This will allow a GO to perform the 36-calendar month review of the Generator Cold Weather Constraint for both instances at the same time.

It is the submitting entity's responsibility to ensure that all information detailed in EOP-012-3 R8 and Attachment 1 is provided in the entity's submittal to facilitate the CEA review. The submitting entity should review language within Attachment 1 and identify, in the submittal, if the Generator Cold Weather Constraint is a known Generator Cold Weather Constraint or a Generator Cold Weather Constraint requiring further review for approval.

Step 2 – ERO Enterprise Review

The CEA will acknowledge receipt of the submission in writing (either through Align or email) within 15 calendar days and verify that all information detailed in EOP-012-3 R8 and Attachment 1 is provided in the submitting entity's submittal. The CEA will work with the submitting entity to provide any missing information. The CEA will notify NERC of the Generator Cold Weather Constraint submittal (either through Align or via email) when acknowledging receipt of the submission. Indication of the Generator Cold Weather

[5] Per EOP-012-3 R8.1, the Generator Owner must submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable for in-service units. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, the Generator Owner must submit the Generator Cold Weather Constraint declaration(s) no later than 15 calendar days after commercial operation.

Constraint type (e.g., "Known" or "Case-by-Case") will be included in the notification to ensure NERC has sufficient visibility and oversight in the process.

The CEA will review the Generator Cold Weather Constraint submittal and supporting information[6]. Any additional information requested to support the Generator Cold Weather Constraint review, evaluation, and validation or approval will be coordinated with the submitting entity by the CEA. The CEA will complete the review within 10 calendar days of submittal receipt confirmation for known Generator Cold Weather Constraint and 45 calendar days of submittal receipt confirmation for those Generator Cold Weather Constraint requiring further review for approval or provide notification to the submitting entity that they are extending the time needed to review[7].

The determination whether to approve the case-by-case Generator Cold Weather Constraint will be based on the specific facts and circumstances provided by the submitting entity that defends and supports the declared constraint under the identified situations in EOP-012-3 Attachment 1.

Step 3 – Registered Entity Notification

The CEA will communicate the validation, approval, or denial of the Generator Cold Weather Constraint or continuation of the time needed to review the Generator Cold Weather Constraint in writing (via Align or email) to the submitting entity including the rationale for the determination. For any continuation of the review, the CEA will also provide the submitting entity with a revised timeline for when the determination will be provided. Denial of a Generator Cold Weather Constraint requires the entity to update its CAPs with corrective actions that will be completed within the timetables in Requirement R6 Part 6.3 or Requirement R7 Part 7.1 to begin from the date the GO is notified that the Generator Cold Weather Constraint is invalid. Communication efforts between the submitting entity and the CEA related to updates of the CAP and timetables resulting from a denial of a Generator Cold Weather Constraint are strongly encouraged.

If a Generator Cold Weather Constraint was denied, the submitting entity may request, within 15 calendar days of denial, a joint NERC and CEA review of the denial. The joint review should take no longer than 10 calendar days (subject to the information and resources available.) NERC and the CEA will evaluate the information provided and the submitting entity will be notified of the determination.

Step 4 – Reporting to NERC

Quarterly, the CEA will provide NERC with a report that, at a minimum, includes each Generator Cold Weather Constraint request received, whether the request was validated, approved, or denied, and the CEA's rationale for its decision. NERC will periodically provide trending and analysis of aggregated anonymized Generator Cold Weather Constraint declarations for industry awareness and guidance.

[6] NERC may choose to participate in any review at its own discretion or at the request of the CEA.

[7] If a large number of entities submit Generator Cold Weather Constraints at the same time (especially those tied to initial performance expectations as set in the EOP-012-3 Implementation Plan), the ERO Enterprise anticipates additional time will be needed to accommodate these initial reviews.

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Exhibit D
Technical Rationale

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Technical Rationale

Project 2024-03 Revisions to EOP-012-2
Reliability Standard EOP-012-3 | March 2025

EOP-012-3 – Extreme Cold Weather Preparedness and Operations

Introduction

This document explains the technical rationale and justification for the proposed Reliability Standard EOP-012-3. It provides stakeholders and the ERO Enterprise with an understanding of the technology and technical requirements in the Reliability Standard. This Technical Rationale and Justification for EOP-012-3 is not a Reliability Standard and should not be considered mandatory and enforceable.

Background

From February 8 through February 20, 2021, extreme cold weather and precipitation caused large numbers of generating units to experience outages, derates or failures to start, resulting in energy and transmission emergencies (referred to as the "Event"). The total Event firm load shed was the largest controlled firm load shed event in U.S. history and was the third largest in quantity of outaged megawatts (MW) of load after the August 2003 Northeast blackout and the August 1996 West Coast blackout. The Event was most severe from February 15 through February 18, 2021, and it contributed to power outages affecting millions of electricity customers throughout the regions of ERCOT, SPP, and MISO South. Additionally, the February 2021 event is the fourth cold weather event in the past 10 years, which jeopardized Bulk Power System (BPS) reliability. A joint inquiry was conducted to discover reliability-related findings and develop recommendations from Federal Energy Regulatory Commission (FERC), NERC, and Regional Entity staff. The FERC, NERC, and Regional Entity Staff Report about the February 2021 Cold Weather Outages[1] ("Joint Inquiry Report") was published on November 16, 2021.

Project 2021-07 was a two-phase project to address the 10 sub-recommendations in Key Recommendation 1 of the Joint Inquiry Report for new or enhanced NERC Reliability Standards. Reliability Standard EOP-012-1 was originally developed to address Recommendations 1d, 1e, and 1f of the Joint Inquiry Report through new and enhanced requirements for generator preparedness for extreme cold weather conditions. Reliability Standard EOP-012-2 was revised to address Key Recommendations 1a, 1b, and 1c as well as the FERC directives in the February 2023 Order approving the Phase 1 standards EOP-011-3 and EOP-012-1.[2] Reliability Standard EOP-012-3 is being revised to address FERC directives in the June 2024 Order approving EOP-011-4 and EOP-012-2[3].

1 The February 2021 Cold Weather Outages in Texas and the South Central United States | FERC, NERC and Regional Entity Staff Report | Federal Energy Regulatory Commission

2 *N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094 (2023) (FERC Order), *notice denying reh'g and providing for further consideration*, 183 FERC ¶ 62,034 (2023).

3 *N.AM.Elec.Reliability Corp.*, 187 FERC ¶ 61,204 (FERC Order)

Defined Terms

Previous drafting teams (DTs) developed five defined terms to be added to the NERC Glossary of Terms to make the requirements easier to understand. Project 2024-03 updated the term "Generator Cold Weather Constraint" to meet the FERC directives in the June 2024 Order and provided additional language to clarify issues noted during the development of EOP-012-3, 2024 Small Group Advisory Session(s), and input received during outreach with industry. The five terms are:

Extreme Cold Weather Temperature

The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 1/1/2000 through the date the temperature is calculated.

The definition of Extreme Cold Weather Temperature (ECWT) was developed by the 2021-07 DT to provide clarity to the Generator Owner (GO) on determining what temperature triggers the requirement obligations. Each GO should select a reliable source of data from a recording location near the plant to determine their ECWT. Sources could include, for example, the National Weather Service (NWS) or National Oceanographic and Atmospheric Administration (NOAA) weather stations, Federal Aviation Administration (FAA) weather stations, or Environment and Climate Change Canada location for Canadian entities[4], etc. NOAA's National Centers for Environmental Information provides Climate Data Online (CDO) as a free resource that includes quality-controlled weather data and 30-year Climate Normals[5]. In general, GOs should use the location nearest the plant, but may select a further location if geographic or local climatic patterns make a further location more representative of the weather at the generating unit. GOs may use on-site weather stations if data, which reasonably matches reliable nearby off-site sources since January 1, 2000, is available. The starting period chosen by the 2021-07 DT to gather data to determine the lowest temperatures that occur near a facility is based on the completion of the modernization of the National Weather Service project known as MAR (Modernization and Associated Restructuring). This project was completed in the year 2000. In general, the National Weather Service modernization provides weather data to be available at most large airports. This will make it fairly accessible for companies to gather data and perform the required analysis. The December through February timeframe was selected to correspond to the meteorological winter, as defined by NOAA.[6]

The 2021-07 DT discussed methods for determining an ECWT with engineering design professionals, and it was determined that it is typical engineering practice to use a statistical approach to determine the design temperature when implementing generation facility freeze protection measures. The 2021-07 DT determined that only winter temperature values (i.e. between December and February) shall be used for the statistical approach and based on analysis of multiple weather data sites. It was determined that by using the lowest 0.2 percentile, there will be sufficient data points to ensure that a single hour at a temperature that may not be accurate, or may be a statistical anomaly, doesn't result in an overly conservative design or preclude the ability of the GO to use historical operating data to prove compliance to the requirements. The 2021-07 DT selected the 0.2 percentile of winter month temperatures since 1/1/2000 to identify a temperature which has been rarely surpassed, but which allows some margin for a

4 Environment and Climate Change Canada - Canada.ca
5 U.S. Climate Normals | National Centers for Environmental Information (NCEI) (noaa.gov)
6 Meteorological Versus Astronomical Seasons | News | National Centers for Environmental Information (NCEI) (noaa.gov)

GO to have previously demonstrated successful operation. The 2021-07 DT considered using the lowest recorded hourly ambient temperature, but upon further review of the historical weather data and generally accepted design principles, determined that the statistical approach to setting the ECWT for a site's location was more reasonable.

The 2024-03 DT recognized comments and concerns raised during the 2024 Small Group Advisory Session on cold weather preparedness regarding application of the ECWT calculation if hourly temperature values were questionable. If complete data sets are not available (e.g., data is corrupt or missing) at a single weather station back to January 1, 2000, the GO should document the methodology they use to determine their ECWT, such as appending data from multiple weather stations or selecting a complete or partial data set from a weather station further away from the facility. The 2021-07 and 2024-03 DTs realized that a complete data set (i.e., all hours of every day of every year for the months of December, January, and February) may not be available due to a variety of technical reasons. To that point, the GO's approach in handling the missing/corrupt data should be documented in their methodology and available to Compliance Monitoring Enforcement Program (CMEP) staff as needed. To accommodate concerns raised by industry, the 2024-03 DT felt additional clarification was needed to address missing data and set an expectation for entities to meet when reviewing the inputs to the ECWT calculations within Requirement R1. Entities should be able to explain the reasoning behind the substitution of missing or corrupt data points.

It has been noted by the industry that there may be the possibility of missing temperature data utilized for the ECWT calculation. The 2024-03 DT discussed data completeness concerns and, after considering the likely variability in such hourly temperature data sets across North America, ultimately chose not to establish a requirement regarding the size of the data set necessary to support an accurate ECWT determination. The 2024-03 DT understands the entity may very well have an overall approach to missing data versus a generating unit-by-unit approach. By the nature of the percentile function, significant data loss may not change the ECWT value. The key is where the data is missing in relationship to the ECWT determined value. Note that compliance obligations when the ECWT is determined near 32 degrees Fahrenheit, tend to dictate the need for a more rigorous level of effort needed to help determine possible impacts of missing temperature data. Missing hourly temperature values above the ECWT has limited impact to the determination. However, missing hourly temperature values below the ECWT can impact the ECWT determination value. For example, the 0.2 percentile of 50,000 hourly values equates to 100 hourly values (in this case the lowest recorded hourly temperatures.) If there are missing hourly values that would have been included in the list of the lowest 100 hourly temperature values, those values should be explained by the entity and may warrant further review. Missing data in the lowest 100 values effectively has the potential of moving the ECWT value higher but that is dependent upon the data set. This simplified example is intended to demonstrate a principle; not establish a fixed number of lowest temperature values of concern. Any data set with missing or invalid hourly temperature values recorded during the coldest periods since January 1, 2000 should be carefully evaluated to ensure that any adjustments utilized on those particular values are properly addressed in a transparent and logical way. Please reference the Calculating Extreme Cold Weather Temperature document drafted by the 2021-07 DT and updated by the 2024-03 DT for an example of how to calculate the ECWT[7].

7 Report (nerc.com)

Generator Cold Weather Critical Component

Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

The 2021-07 DT felt the best method to address where freeze protection measures should be implemented was to define a term which specifies a subset of components that may be susceptible to freezing and are critical to the operation of generating units. GOs should consider previous freeze-related issues experienced by the generating unit(s), as well as actions taken to mitigate those freeze-related issues, when establishing its list of Cold Weather Critical Components. The 2021-07 DT also felt it is appropriate to specifically exclude components that are not susceptible to freezing due to being inside heated buildings that maintain the interior temperature above freezing.

The 2021-07 DT's intent with regard to the language "that is under the Generator's Owner's control" was to clearly delineate that cold weather events external to the generation site such as loss of fuel supply or loss of auxiliary power to the site that resulted in a Generator Cold Weather Reliability Event (see definition below) would not be subject to this standard. Furthermore, ice buildup on transmission lines and/or high voltage lines between the generating station and point of interconnection with the Transmission Owner would not constitute a freezing condition in the context of this Standard, and therefore, these lines would not be considered a Generator Cold Weather Critical Component.

The 2021-07 DT's intent with the use of the phrase "permanent building" is to refer to a structure that is in place year-round, shall accommodate personnel entry, and has a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit for the purpose of protecting components from freezing (e.g. heated container that protects inverter-based resources or battery energy systems). The 2024-03 DT recognized comments and concerns raised during the 2024 Small Group Advisory Session on cold weather preparedness regarding heating of the "permanent building." The HVAC/heating system is not a freeze protection measure in terms of being included in the cold weather preparedness plan as it is not protecting a Generator Cold Weather Critical Component (per the definition) nor is it a Generator Cold Weather Critical Component. The 2024-03 DT expects the HVAC/heating system to be part of routine maintenance and monitoring to ensure that the heated building remains above 32 degrees Fahrenheit.

Fixed Fuel Supply Component

Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

The 2021-07 DT wanted to clarify the boundaries of responsibility for the GO as it relates to sites having fuel handling equipment within their control and responsibility to provide freeze protection. The intent of

this definition is to clarify that mobile equipment is not part of this requirement, but permanent fixed equipment impacting fuel delivery needed for generation is included.

Generator Cold Weather Reliability Event

One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

Key Recommendation 1d: To require Generator Owners that experience outages, failures to start, or derates due to freezing to review the generating unit's outage, failure to start, or derate and develop and implement a corrective action plan (CAP) for the identified equipment, and evaluate whether the CAP applies to similar equipment for its other generating units. Based on the evaluation, the Generator Owner will either revise its cold weather preparedness plan to apply the CAP to the similar equipment, or explain in a declaration (a) why no revisions to the cold weather preparedness plan are appropriate, and (b) that no further corrective actions will be taken. The standard drafting team should specify the specific timing for the CAP to be developed and implemented after the outage, derate, or failure to start, but the CAP should be developed as quickly as possible, and be completed by no later than the beginning of the next winter season.

The Key Recommendation from the Joint Inquiry Report recommends a Reliability Standard that requires GOs to develop a Corrective Action Plan for generating units that experience outages, failures to starts, or derates due to freezing. The Joint Inquiry Report identifies that most of the outages and derates in the February 2021 event were due to freezing of instrumentation, transmitters, sensing lines, or wind turbine blades (p 166 in the Joint Inquiry Report). As such, the 2021-07 DT followed the Joint Inquiry Report recommendation to require a Corrective Action Plan when the apparent cause of the event is freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, or freezing rain) on equipment. The 2021-07 DT felt that it was important to clearly call out freezing precipitation as these events were included in the outages and derates that identified as freezing in the Joint Inquiry Report. Furthermore, Key Recommendation 1c of the report requires GOs to account for the effect of precipitation. The 2021-07 DT has developed parameters around these events to clarify a reasonable baseline of what level of derate qualifies as an event, and provide additional language to identify what constitutes a start-up failure. With the additional clarifications, the 2021-07 DT determined that the standard would benefit from a defined term, to clearly and efficiently state what constitutes an event. The result is a new defined term, Generator Cold Weather Reliability Event, that defines the circumstances for which a Corrective Action Plan is required (i.e., when a freezing event affects the equipment within the control of the GO). The defined term will make the standard easier to understand and implement by providing clear and reasonable factors to determine whether the impact of an event requires mitigation. The 2021-07 DT is

using the definition of apparent as defined in the Webster's dictionary as "clear or manifest to the understanding".

Note that the 2024-03 DT provided additional language to alleviate concerns regarding the administrative nature of developing Corrective Action Plans specifically for similar noted issues occurring at one or more locations (e.g., freezing precipitation on wind turbines). Care should be taken if updating existing Corrective Action Plans for additional units especially in terms of effectively capturing the actions and timetables applicable to the additional units.

The Corrective Action Plan requirement applies to any forced outage due to freezing, regardless of duration. Derates, which are short lived (specified as four hours by the 2021-07 DT) or of small capacity impact (specified as less than 20 MW by the 2021-07 DT, which roughly corresponds with the threshold for Bulk Electric System (BES) impacting generation units), are excluded from the Corrective Action Plan requirement to limit the administrative burden to GOs for events that are minimally impacting to the BES. Also excluded are proactive operational actions to limit the potential of forced outages or derates. It should be noted that nothing in this standard prevents a GO from taking its own corrective actions resulting from such events. Startup failures for conventional generation are defined using the Generating Availability Data System (GADS) definition with the removal of "following an outage or reserve shutdown", since reserve shutdown is defined differently by NERC in GADS than it is by some of the Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs). From the GADS data reporting instructions, the startup period for each unit is determined by the operating company. It is unique for each unit and may depend on the condition of the unit at the time of startup (cold, warm, or hot). A typical unit startup occurs in three phases: warm up, synchronization, and ramp up. NERC defines a startup period to begin with the command to start and end when the unit is synchronized. A startup failure begins when a problem, preventing the unit from synchronizing, occurs. The startup failure ends when the unit is synchronized, another startup failure occurs, or the unit enters another permissible state.

The 2021-07 DT determined that Corrective Action Plans will be required for any freezing event that occurs at temperatures above the generator site's ECWT. By using the site's ECWT, as opposed to the generator unit minimum temperature as defined by the GO in Requirement R1 Part 1.2.2 as the threshold, this achieves the following:

- Provides a consistent basis for the temperature at which CAPS are required for all GOs
- Provides a consistent basis for when Corrective Action Plans are required for all generation types
- Provides a consistent basis for when Corrective Action Plans are required regardless of the level of effort that GOs may have applied to-date winterizing their generators such that they can operate to the ECWT that their sites will reasonably experience
- Removes any incentive (perceived or real) to not further winterize GOs generating sites to meet the ECWT at the GO site by not providing a window where one site might not be subject to the Corrective Action Plan requirement while sites in the same vicinity experiencing the same temperatures are subject to this requirement

- Removes any disincentive for GOs to design the units to operate well below the ECWT for a site by not requiring them to perform Corrective Action Plans while sites in the same vicinity experiencing the same temperatures are subject to this requirement

Generator Cold Weather Constraint

Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would be expected to result in improved generating unit performance during cold temperatures.

The 2024-03 DT reviewed the material from the June 2024 Order when determining how best to update the Generator Cold Weather Constraint definition. The 2024-03 DT relied upon industry and FERC guidance as a basis for updating the definition language and the process captured in Attachment 1 of EOP-012-3. The 2024-03 DT also ensured that constraint language would be fully captured within the Standard itself through Attachment 1. Based on comments received during the ROP 321 comment period, additional revisions were made to clarify the scope of freeze protection measures that may be precluded by a constraint (i.e. not just optimum solutions, but other solutions expected to improve performance).

The 2024-03 DT felt that an Attachment that included specific language further explaining Generator Cold Weather Constraints with discrete known Generator Cold Weather Constraints and other case-by-case Generator Cold Weather Constraints meets the FERC (and industry) expectations to provide unambiguous, objective, and auditable language. The 2024-03 DT discussed providing clarity with examples knowing that additional instances or conditions that may be considered a Generator Cold Weather Constraint may exist.

Per the FERC Order, NERC staff are responsible to provide a process describing the receipt, evaluation, approval (as needed), and validation of Generator Cold Weather Constraints. This process is captured in the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") document.

Attachment 1 contains a non-comprehensive list of known Generator Cold Weather Constraints as well as a list of situations, circumstances, and criteria that may constitute a Generator Cold Weather Constraint. The GO **must** submit all Generator Cold Weather Constraints to the Compliance Enforcement Authority (CEA) for approval, regardless of which category it might fall into.

Once a declaration is approved by the CEA, it is considered valid. It is the GO's responsibility to document, in the Generator Cold Weather Constraint declaration, the circumstances and reasons why the modification needed to address the freeze protection measure(s) is not being implemented. A Generator Cold Weather Constraint declaration, that no further corrective actions will be taken, is expected to be used sparingly.

The 2024-03 DT is intentionally leaving room for additional instances of Generator Cold Weather Constraints as it would be impossible to foresee every potential circumstance that could possibly necessitate a review of potential freeze protection technologies across the breadth of the United States and Canada and the breadth of generating unit types and ages that fall under this Standard. Furthermore, the 2024-03 DT wants to ensure the Standard language supports the adoption of new freeze protection measure practices, methods, or technologies while not immediately requiring a new freeze protection measure practice, method, or technology to be implemented industry-wide when a leading utility pilots a novel approach, as this would be a disincentive to utilities piloting new technologies. The 2024-03 DT encourages additional studying and implementation of freeze protection measures to remove Generator Cold Weather Constraints as appropriate over time.

In the June 2024 Order, there was a directive to change the frequency of Generator Cold Weather Constraint reviews to facilitate consideration of new freeze protection measure technologies to reduce the risk resulting from the need for a Generator Cold Weather Constraint. That change is captured in Requirement R9 discussed later in this Technical Rationale document.

Facilities

After reviewing the reference material and the efforts of the 2021-07 DT, the 2024-03 DT determined that EOP-012-3 should continue to apply to all BES generating units in order to ensure consistency in extreme cold weather preparedness. The Applicability section first defines "generating unit" as a BES resource. The NERC Glossary of Terms provides the foundation for what BES resources are included in the definition (see Inclusions I2 through I4). Additionally, Blackstart Resources are also specifically declared subject to the winterization requirements. Such Blackstart Resources, consistent with the NERC Glossary of Terms, are those units designated in the Transmission Operator's (TOP) restoration plans. Proposed EOP-012-3 clarifies which Facilities and their Generator Cold Weather Critical Components are subject to implementing freeze protection measures through specific language in Requirements R2 and R3. The 2024-03 DT briefly discussed GO Category 2 Inverter-Based Resource (IBR) applicability to EOP-012-3 but it was noted the applicability is under review as part of the Registration of IBR Work Plan so no changes were presented.

Rationale for Requirement R1

The Project 2024-03's Technical Rationale language for Requirement R1 did not substantially change from 2021-07 DT language and, as such, use of DT below is referencing 2021-07 DT. Much of the criteria of R1 is carried over from the previously approved EOP-011 Standard and requires the GO to document several cold weather performance parameters for the unit. This information is valuable and must be shared with other entities per their data specifications. For Requirement R1 Part 1.1, the GO is required to calculate the Extreme Cold Weather Temperature (ECWT) for each unit using a reliable source of data (See the supporting document "Calculating Extreme Cold Weather Temperature"). The DT believes that the GO is in the best position to select the most representative weather information relative to its generating unit. The ECWT will be updated if a new lower ECWT is determined under the periodic review requirement of R1. Defining the operating limitations in Requirement R1 Part 1.2.1 will make affected personnel more aware of unit capabilities and constraints as well as systems and practices that may be necessary to ensure reliability in cold weather, particularly when alternative fuels are involved. In addition, the unit minimum temperature identified in Requirement R1 Part 1.2.2 is used to support demonstrating compliance with Requirement R3 for existing units. The DT chose one hour of historical operating data recognizing there is extremely limited historical operating data available for a unit below their ECWT. This was not to infer the DT expects that existing generation will only reliably operate for one hour during an extreme cold weather event. The information contained within Requirement R1 Part 1.2 is required to be requested by the BAs in TOP-003 to make sure they have the most accurate unit performance information possible for their reliability analysis during the winter season. It is critical, especially if a Corrective Action Plan, extension request for a Corrective Action Plan, or a Generator Cold Weather Constraint declaration is in effect, that the GO keep Requirement R1 Part 1.2 information updated with those entities requiring said information. The 2024-03 DT did not add a notification Requirement to EOP-012-3 as TOP-003 and IRO-010 obligate the applicable entities (Balancing Authority (BA), Reliability Coordinator (RC), and Transmission Operator (TOP)) to have "*Provisions for notification of BES generating unit(s) during local*

forecasted cold weather to include" Requirement R1 Part 1.2 information. BAs, RCs, and TOPs should have already reviewed their data specifications with regards to EOP-012. The flexibility that industry has required in the determination of data specifications were limited by industry approved Standard language regarding cold weather data and attributes. BAs, RCs, and TOPs should ensure complete coverage and timeliness of Requirement R1 Part 1.2 data submission within their data specifications especially during local forecasted cold weather.

It is recognized that the determination of a single unit minimum temperature is of limited value if applied without consideration of the other ambient conditions under which it was determined, that is, wind and precipitation. Consideration of wind and precipitation, along with the minimum temperature, provides a greater understanding of the potential generating unit capability for cold weather resource planning. The Standard requires that the GO include wind and precipitation data with their generating unit minimum temperature data when the data is available. The impact of deviations from this known temperature/wind/precipitation stated point are expected to be evaluated qualitatively. For example, if the historical minimum temperature occurred at low wind and dry conditions, and actual future cold weather event expected conditions are high winds with precipitation, planning personnel will recognize that a specific unit may not achieve the minimum temperature and can arrange for additional resources. The opposite also applies, i.e., if a design minimum temperature assumes some level of wind and precipitation and actual cold weather expectations are for low wind and dry conditions, planning personnel will recognize that there is increased likelihood that a generation resource may continue to be available below its minimum temperature. If no information about wind or precipitation is known, wind and precipitation are assumed to be zero at the minimum temperature until further information is obtained. The 2024-03 DT did provide updated language within the "Defined Terms" section of this Technical Rationale document to capture concerns regarding ECWT data availability.

Rationale for Requirement R2

The Joint Inquiry Report Key Recommendation 1f referenced recommendation 12 of the 2011 report[8] suggesting that consideration should be given to designing all new generation plants and designing modifications to existing plants (unless committed solely for summer peaking purposes) to be able to perform at the lowest recorded ambient temperature for the nearest location for which historical weather data is available.

In developing the original version of the EOP-012 Reliability Standard, Reliability Standard EOP-012-1, the Project 2021-07 DT determined to impose different cold weather capability requirements for new generation compared to existing generation. Consistent with Key Recommendation 1f of the February 2021 Event Report, GOs would be required to design new units to operate to a specified ambient temperature (the ECWT) and weather conditions for the location, accounting for the cooling effects of wind. Due to the difficulty of performing the same level of design analysis on existing generation as on

8 https://www.nerc.com/pa/rrm/ea/February%202011%20Southwest%20Cold%20Weather%20Event/SW_Cold_Weather_Event_Final.pdf

new generation, the high threshold of the ECWT, and the expected availability of historical data to support sustained operations at that ECWT, the Project 2021-07 DT determined to impose less stringent requirements for retrofitting existing generating units. The Project 2021-07 DT initially specified the "effective date of the requirement," which would be determined in accordance with the EOP-012-1 Implementation Plan, as establishing which set of generators would be "grandfathered" and subject to the less stringent requirements, and which generators would be subject to the more stringent requirements for new generation.

The 2021-07 DT chose 12 hours of continuous operation because it is a typical length of the nighttime in winter in most regions of the US and Canada and typically include the hours with the coldest experienced temperatures. The 2021-07 DT was of the opinion that tying the requirement to the 12-hour period would provide a reasonable level of reliability during a cold weather event. The 2021-07 DT chose a concurrent sustained 20 mph wind speed after an evaluation using the wind chill formula developed by the NWS in the United States. Though wind chill temperature is not an exact science, it is widely understood to reflect the **non-linear increased rate of convective heat loss due to air moving at different velocities**. Commonly available charts show wind chill temperatures as a function of actual air temperature at various wind speeds. Approximately 2/3 of the wind chill temperature drop between 0–60 mph is achieved at 20 mph. Using the NWS chart, this holds true for still air temperatures starting at 40ºF and dropping in 20-degree increments to -40°F. Further, 20 mph is a wind speed commonly experienced across the ERO and yet appropriately higher than the approximate average wind speeds in the United States and Canada, 6-12 mph and 8-11 mph respectively. GOs may apply a wind chill calculation in determining their ability to meet the criteria in Requirement R2. It should be noted that solar and battery OEMs provide little guidance on their facilities capability to perform in cold weather and wind combined. Depending on how a GO approaches this, the effect of wind on generating units may play a large part in how a Generator Cold Weather Constraint may be declared. GOs should consider that wind concurrent with cold temperatures will decrease the amount of time for a unit's equipment (e.g., sensing lines, hydraulics) to reach the ambient temperature. While this may not be readily apparent in all cases, operational history of operating at a certain temperature may not equate (in terms of capability or duration of operation) to operating at that same temperature with a 20 mph (32 km/h) wind speed. Providing freeze protection measures, such as tarps or temporary wind block structures, may support the ability to operate longer during extreme cold weather. Each of these three probabilistically infrequent conditions (the ECWT, a steady 20 mph (32 km/h) wind, and a duration of 12 continuous hours at these conditions) is, in and of itself, conservative. When they have their effects combined, it results in a requirement that will significantly contribute to BES reliability during extreme cold weather conditions.

In developing Reliability Standard EOP-012-2 and a shorter Implementation Plan to meet the directives of the FERC February 2023 Order, the Project 2021-07 determined to replace "effective date of this requirement" with a date certain, October 1, 2027. In establishing this date, the 2021-07 DT considered the original proposed Implementation Plan for Reliability Standard EOP-012-1 which would have had this requirement effective April 1, 2028, FERC's directives to shorten this plan as it related to existing generation, the need to ensure generation is prepared for cold weather, as well as the fact that new generation coming online prior to October 1, 2027 is likely to be significantly advanced past the design phase when incorporating measures to provide capability in sustained wind conditions would be most

cost effective and reasonable. Reliability Standard EOP-012-2 introduced the option for owners of new generating units to develop a Corrective Action Plan (removed in EOP-012-3 efforts), in the event they could not meet the more stringent requirements for new generation upon entering commercial operation on or after October 1, 2027.

In the June 2024 Order (paragraph 72), FERC directed NERC to modify EOP-012-2 to address Corrective Action Plans for new generating units. The Commission stated that, while it was persuaded by NERC's rationale that there needs to be allowances made for units that are well into their construction phase to complete corrective action plans for elements already designed, it was concerned that Reliability Standard EOP-012-2 did not clearly differentiate between projects in an advanced stage of construction and those in a lesser phase of construction. The Commission found that "generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation." Based on this finding, the Commission directed NERC to revise the EOP-012 standard "to clarify that any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date."

The Project 2024-03 DT considered several options to both address the FERC directive and account for the concern that certain generators may be too far along in the construction phase to make changes to meet the more stringent criteria readily. These options included extending the "grandfathering" date past October 1, 2027 and redefining "commercial operation" to a less specific phrase, such as "in operation". However, the Project 2024-03 DT determined that maintaining the October 1, 2027 date as the "grandfathering" date was important in the interest of raising the bar for reliability in future cold weather seasons. It did not identify any compelling reason to change either that date or the existing measure of "commercial operation" from the previous versions of the standard.

Earlier drafts of the EOP-012-3 standard included different requirements depending on when the generating unit was designed and when it entered commercial operation. It was thought that units that were coming online the first winter of the new requirements (winter 2027-2028), but that were designed prior to June 2023, would be significantly far along in development and construction, and this represented a reasonable demarcation point to allow additional time to implement required capability in accordance with a short -term Corrective Action Plan.

However, comments received during the final comment period indicated several flaws with this approach, including concerns about the potential dates and applicability in non-U.S. jurisdictions. Therefore, this issue is instead addressed in the implementation plan where the scope and applicability can be stated more plainly.

Thus, in the final draft of proposed EOP-012-3 Requirement R2, new generation entering commercial operation on or after October 1, 2027 will either need to: (1) meet the more stringent freeze protection measures called for new generation; or (2) declare a constraint that prevents them from doing so in accordance with Requirement R8. As concerns were raised about requiring Corrective Action Plans of GOs before they may be formally subject to compliance with standards, there is no requirement for GOs to

complete Corrective Action Plans ahead of entering commercial operation in Requirement R2. This is consistent with the underlying intent of the June 2024 Order and more closely resembles the original EOP-012-1 requirements for new generation.

In non-U.S. jurisdictions, entities will use the "grandfathering" date established by the Applicable Governmental Authority, if that is not October 1, 2027.

Rationale for Phased-in Compliance Date for Requirement R2 in Implementation Plan

As noted above, a concern was identified in earlier phases of the development of EOP-012-3 regarding how to account for new generating units that may be too far along in their construction phase to readily implement corrective action plans prior to entering commercial operation the first winter season those requirements would be in effect in the United States (winter 2027-2028).

Under the Implementation Plan, GOs of certain new generating units would have the option to enter commercial operation and have additional time to comply with the more stringent requirements of R2, if a constraint would not apply. For this phased-in compliance date to apply, the GO must have first contractually committed to the design criteria for the unit before June 29, 2023, and the unit must first enter commercial operation between October 1, 2027 and March 31, 2028 (inclusive of the start and end dates). This reflects consideration of NERC's original proposed effective date of EOP-012-1 requirements for new generation.[9]

The June 29, 2023 date, included in the Implementation Plan, represents the date by which the Project 2024-03 DT concluded that GOs would have had reasonable certainty regarding the freeze protection requirements for new generation under the EOP-012 standard and should have begun including them in their design criteria for new generating units. FERC issued its order approving EOP-012-1 and the definition of Extreme Cold Weather Temperature in February 2023; however, the Project 2024-03 DT considered comments stating that there was still some regulatory uncertainty past this time, as several entities had filed for rehearing on various aspects of the standard. On June 29, 2023, FERC issued an order addressing arguments raised on rehearing, resolving any remaining uncertainty regarding the standard to which new generation would be expected to perform in the future (see FERC decision).

It is important to note that this is simply an additional *option* for such GO, intended to enable them to enter commercial operation sooner and begin supplying needed power to the grid faster than if they were required to delay their commercial operation dates to provide the required capability.

In summary, the implementation plan for Requirement R2 specifies that, for certain entities that undertook efforts to finalize their designs before June 29, 2023 before the scope of new requirements became clear, those entities do not have to achieve the required capability during their first winter in

9 Under NERC's original proposed implementation plan for EOP-012-1, this requirement for new generation would have become effective April 1, 2028. In its February 2023 Order, FERC directed NERC to modify the proposed EOP-012-1 implementation plan to reflect the urgency of the need to implement the standard, including to shorten the 60-month implementation plan for existing generating units. Reliability Standard EOP-012-2 shortened these dates and established October 1, 2027 as the "grandfathering" date for new generation.

commercial operation, and instead have until April 1, 2028. (If a constraint is applicable, the entity must submit that constraint within 15 days of entering commercial operation). Entities would be expected to demonstrate that they are eligible to use the phased-in timeline, such as through dated contracts showing that it contractually committed to design criteria for the unit in question before that time. It was considered that entities would generally retain such contracts for their units under construction in the normal course of business and this would impose no additional burden.

For all new generating units entering commercial operation on or after October 1, 2027 that do not meet the above exception, those units must either implement the more stringent capability required in Requirement R2 by their commercial operation date or declare a Generator Cold Weather Constraint. **It is recognized that such generating units may need to delay their originally planned commercial operation date if they do not have the required capability and a Generator Cold Weather Constraint would not apply**. *See* June 2024 Order at P 72.

Rationale for Requirement R3

The 2021-07 Drafting Team created a requirement for existing generating units, as defined in Requirement R3, to be able to operate at their ECWT. Many existing generating units have already demonstrated this capability. An early FERC order on EOP-012-1 rejected a one-hour timing requirement, consequently the 2021-07 DT chose to forego any specific time requirement in Requirement R3. If a generating unit cannot meet the requirements of Requirement R3, it is required to develop a CAP to add new freeze protection measures or modify existing freeze protection measures to be capable of operations at the ECWT (as calculated in Requirement 1).

Rationale for Requirement R4

General Considerations

Requirement R4 requires GOs to develop and maintain cold weather preparedness plans for their unit(s) and describes the information and documentation required in such plans. It is an expansion of the cold weather preparedness plan required under Requirement R7 of EOP-011-2 and is intended to be used and reviewed regularly by the GO. Originally, Requirement R4 Part 4.5 required the GO to annually inspect and perform necessary maintenance of freeze protection measures. The 2024-03 DT added some clarifying language to ensure that annual inspection and maintenance of freeze protection measures is applied specifically to Generator Cold Weather Critical Components. While other freeze protection measures may be applied to equipment by the GO, the freeze protection measures included in the cold weather preparedness plan with annual inspections and maintenance are expected to be those applied to Generator Cold Weather Critical Components. Working in concert with other parts of EOP-012-3, including but not limited to Requirements R1, R5, R6, and R7, the substantive elements of the cold weather preparedness plan will be subject to review requirements, updated as necessary, and the responsible party (GO or GOP) is required to annually train personnel on the cold weather preparedness plan requirements.

Requirement R4 Part 4.1

In Requirement R4 Part 4.1, the GO is required to include in the cold weather preparedness plan the lowest ECWT, as calculated pursuant to Requirement R1, for each unit using reliable source(s) of data. The 2021-07 DT believed that the GO is in the best position to select the most representative weather information relative to its generating unit. The cold weather preparedness plan will be updated if a new lower ECWT is calculated under the Requirement R1 periodic review language.

Requirement R4 Part 4.2

Requirement R4 Part 4.2 is intended to capture, within the cold weather preparedness plan, the information being developed pursuant to Requirement R1 Part 1.2, which is carried over from the previously approved EOP-011 Standard and requires the GO to document several cold weather performance parameters for the unit. This information is valuable, and in some cases, must be shared with other entities consistent with the data specification requirements contained in TOP-003 and IRO-010. A requirement for the GO to document this information within the cold weather preparedness plan ensures the information is readily available and documented when the GO responds to a data specification. It should be noted that if a Corrective Action Plan extension request is approved, the underlying generator cold weather data, as called out in Requirement R1 Part 1.2, should be correctly identified by the GO and provided to the RCs, BAs, and TOPs as requested. The June 2024 Order mentions this in Paragraph 3. The 2024-03 DT believes that the data specification Reliability Standards applicable to RCs, BAs, and TOPs (e.g., IRO-010 and TOP-003) require the entities to request the information and the GO is therefore obligated to provide the most current version of the relevant information within a Corrective Action Plan. The 2024-03 DT did not believe a notification Requirement was needed in EOP-012-3 in addition to those already existing in the data specification Reliability Standards. The 2024-03 DT encourages parties to work together to ensure the most accurate and up-to-date information is provided, especially when conditions increase risk to reliable operations. See the Technical Rationale for Requirement R1 for substantive rationale regarding the operating limitations and generating unit minimum temperatures documented in the cold weather preparedness plan.

Requirement R4 Part 4.3

In Requirement R4 Part 4.3, the GO identifies the Generator Cold Weather Critical Components to help inform their decision on where to implement appropriate freeze protection measures. The NERC *Reliability Guideline, Generating Unit Winter Weather Readiness – Current Industry Practices*[10], presents a suggested list of components that GOs may choose to utilize when developing their own Generator Cold Weather Critical Component inventory. The GO shall develop and maintain a list of Generator Cold Weather Critical Components for each unit.

Requirement R4 Part 4.4

Requirement R4 Part 4.4 requires GOs to document the freeze protection measures implemented on Generator Cold Weather Critical Components. These freeze protection measures should include those to reduce the cooling effects of wind. Requirement R4 does not require GOs to install new freeze protection measures to reduce the cooling effects of wind, but rather to identify freeze protection measures for

Generator Cold Weather Critical Components that will protect against heat loss and the effect of freezing precipitation, where applicable, and document those measures (e.g., water-resistant insulation, protective shielding, insulated boxes, etc.). These measures could include temporary measures as well, such as wind breaks, but there is no expectation for entities to list all climate-controlled areas as freeze protection measures. Specifically, the freeze protection measures applied to Generator Cold Weather Critical Components must be captured in the cold weather preparedness plan.

Requirement R4 Part 4.5

Requirement R4 Part 4.5 is largely carried over from the previously approved EOP-011 Standard and requires annual inspection and maintenance of the freeze protection measures applied to Generator Cold Weather Critical Components identified in the cold weather preparedness plan. The 2024-03 DT added clarifying language to emphasize the need to effectively mitigate risk on the Generator Cold Weather Critical Components. This Requirement ensures these freeze protection measures will be ready and serviceable when needed.

Rationale for Requirement R5

The 2024-03 DT noted that there could be a combination of operations and maintenance personnel that require training, so minor adjustments were made to that extent. Additionally, the personnel may not be physically located at the generator site depending on how an entity implements their cold weather preparedness plan(s).

Rationale for Requirement R6

Key Recommendation 1d: To require Generator Owners that experience outages, failures to start, or derates due to freezing to review the generating unit's outage, failure to start, or derate and develop and implement a corrective action plan (CAP) for the identified equipment and evaluate whether the CAP applies to similar equipment for its other generating units. Based on the evaluation, the Generator Owner will either revise its cold weather preparedness plan to apply the CAP to the similar equipment or explain in a declaration (a) why no revisions to the cold weather preparedness plan are appropriate, and (b) that no further corrective actions will be taken. The standard drafting team should specify the specific timing for the CAP to be developed and implemented after the outage, derate, or failure to start, but the CAP should be developed as quickly as possible and be completed by no later than the beginning of the next winter season.

The Key Recommendation from the Joint Inquiry Report recommended a Reliability Standard that requires GOs to develop a Corrective Action Plan for generating units that experience outages, failures to starts, or derates due to freezing. The Joint Inquiry Report identifies that most of the outages and derates in the February 2021 event were due to freezing of instrumentation, transmitters, sensing lines, or wind turbine blades (p 166 in the Joint Inquiry Report). As such, the 2021-07 DT followed the Joint Inquiry Report recommendation to require a Corrective Action Plan when the apparent cause of the event is freezing.

The 2021-07 DT developed parameters around these events to clarify a reasonable baseline of what level of derate qualified as an event and provide additional language to identify what constitutes a start-up failure. With the additional clarifications, the 2021-07 DT determined that the Reliability Standard would benefit from a defined term, to clearly and efficiently state what constitutes an event. The result was a defined term, Generator Cold Weather Reliability Event, that describes the circumstances for which a Corrective Action Plan is required (i.e., when a freezing event affects the equipment within the control of the GO). The defined term made the Reliability Standard easier to understand and implement by providing clear and reasonable factors to determine whether the impact of an event requires mitigation. However, because of the June 2024 Order, the 2024-03 DT updated Requirement R6 to provide clearer timeline obligations for those units that suffer a Cold Weather Reliability Event. In general, the 2024-03 DT understands that if a Generator Cold Weather Reliability Event occurs, GOs will remediate the issue as soon as possible.

General Considerations for All Corrective Action Plans

To simplify the proposed requirements related to creating a Corrective Action Plan, the 2021-07 DT used the NERC Definition of a Corrective Action Plan. The Corrective Action Plan definition reads "A list of actions and an associated timetable for implementation to remedy a specific problem." As written, the definition requires two parts for a document to qualify as a Corrective Action Plan, i.e., a list of items to be addressed and a timeline for completion. A Corrective Action Plan without both a list of actions and the timeline to implement is not complete. The 2024-03 DT provided additional language for Corrective Action Plans to clarify expectations for those Corrective Action Plans created as a result of a Generator Cold Weather Reliability Event and other Corrective Action Plans referenced throughout the Requirement language. The resulting language kept the underlying structure developed during previous Projects but clarified and added information as needed to meet the June 2024 Order.

The Corrective Action Plan requirement applies to Generator Cold Weather Reliability Events as well as other instances of required actions to support reliable operations within the EOP-012-3 Standard Requirements. It should be noted that nothing in this Standard prevents a GO from taking its own corrective actions resulting from events that do not meet the criteria of a Generator Cold Weather Reliability Event. Startup failure criteria were based on the GADS definition with the removal of "following an outage or reserve shutdown", since the definition of reserve shutdown is different in GADS than it is in some of the Regional Transmission Organizations (RTOs).

Requirement R6 requires the GO to develop, implement, and complete a Corrective Action Plan prior to the first day of December following a Generator Cold Weather Reliability Event. Note that the 2024-03 DT, Standards Committee in the exercise of its responsibility under Section 321 of the NERC Rules of Procedure and NERC staff, considered early occurrences (e.g., September, October, or November) of Generator Cold Weather Reliability Events and provided a footnote to allow remedial activities to be completed by December 1 of the following calendar year. The December 1 date was chosen based on the guidance in the June 2024 Order and the urgency stated within the June 2024 Order regarding this risk. A number of commenters in the final posting suggested that this timeline instead be fixed, such as 12 months, to provide a uniform timeline for implementation regardless of when the event occurred. Such suggestions were considered but declined, as they were not thought to address the risk with the

timeliness identified in the FERC order, and further, corrective actions are likely to be implemented in the fall as part of winter preparations are typically performed or outages for more extensive efforts can be secured.

Requirement R6 would allow GOs to review multiple events holistically following a winter season, if that scenario occurs, and create one Corrective Action Plan for components with common failure causes. Care should be taken when developing a multi-unit or multi-event Corrective Action Plan to ensure it meets the Corrective Action Plan criteria for each unit (e.g., actions and timetables may be different.)

The 2021-07 DT determined that Corrective Action Plans would be required for any freezing event that occurs at temperatures at or above the site's ECWT in accordance with the definition of a Generator Cold Weather Reliability Event. Using the site's ECWT as the threshold, as opposed to the generator unit minimum temperature as determined by the GO, achieves the following:

- Provides a consistent basis for the temperature at which Corrective Action Plans are required for all GOs
- Provides a consistent basis for when Corrective Action Plans are required for all generation types
- Provides a consistent basis for when Corrective Action Plans are required regardless of the level of effort that GOs may have applied to-date winterizing their generators such that they can operate to the ECWT that their sites will reasonably experience
- Removes any incentive (perceived or real) to not further winterize GOs sites to meet the ECWT at the GO site by not providing a window where one site might not be subject to the Corrective Action Plans requirement while sites in the same vicinity experiencing the same temperatures are subject to this requirement
- Removes any disincentive for GOs to design the units to operate well below the ECWT for a site by not requiring them to perform Corrective Action Plans while sites in the same vicinity experiencing the same temperatures are subject to this requirement

The 2024-03 DT provided clarifying language to have Corrective Action Plans developed in response to Generator Cold Weather Reliability Events developed and completed by the first day of December of the winter season following the Generator Cold Weather Reliability Event. Allowances for events which occur in September, October, or November were provided with the expectation that more transient fixes occurring after a Generator Cold Weather Reliability Event would be applied quickly but allowing a reasonable time horizon for compliance with this Requirement (i.e., prior to December 1 of the following calendar year). A Corrective Action Plan triggered by a Generator Cold Weather Reliability Event and for which the apparent cause is the failure of relatively simple existing piece of freeze protection equipment, the scope of the Corrective Action Plan may be documented after the fact. Such prompt repairs may be completed before creation of the Corrective Action Plan, and the GO may complete the implementation of the Corrective Action Plan simply by evaluating the requirements of R6 and documenting how and when the repair work was completed. An example of this circumstance would be a freezing event caused

by a single heat trace circuit failure which would have been sufficient to prevent the event had it not failed.

The June 2024 Order also directed changes affecting the application of a Generator Cold Weather Reliability Event Corrective Action Plans to other units within a GO's fleet. The 2024-03 DT added clarifying language to provide guidance on what the extent of condition (i.e., the review of other generating units) should encompass to help alleviate concerns raised by the industry during the comment and ballot period. Each GO should already know, per Requirement R4, the freeze protection measures on Generator Cold Weather Critical Components. The GOs also have the responsibility, per Requirement R4, to annually maintain and inspect the freeze protection measures on Generator Cold Weather Critical Components. Effectively those Requirements would support quick identification of same or similar equipment susceptible to freezing.

The 2024-03 DT, and later the Standards Committee in the exercise of its responsibility under Section 321 of the NERC Rules of Procedure, established a 12-calendar month window from the time of the originating Generator Cold Weather Reliability Event to complete its fleet-wide review for similar vulnerabilities and develop or update such a Corrective Action plan to address them. In response to multiple stakeholder comments, the Standards Committee provided a 24-calendar to no later than 36-calendar month window (initiated based on the date of the Generator Cold Weather Reliability Event) to implement corrective actions. GOs that complete their fleet-wide reviews sooner than the 12 months allowed would have a longer period of time overall to implement any required corrective actions, incentivizing prompt action to identify the extent of condition across a fleet. While the FERC directive suggesting a potentially longer staggered implementation was considered for more complex implementations, it was determined that developing specific requirements for staggering often presents many logistical challenges, and it may not promote an orderly and efficient implementation depending on the issue needing to be addressed. Allowing up to 36 calendar months total to complete corrective actions would allow GOs with larger fleets to accommodate any required changes. Industry experience with Winter Storms URI and Elliott suggests that the timelines are sufficient in general to mitigate reliability risks. However, a Corrective Action Plan extension may be requested if a particularly complex implementation issue arises requiring longer time to implement.

Entities should evaluate the issue with the freeze protection measure that may have initiated the Generator Cold Weather Reliability Event to see if the maintenance and inspection efforts need to be adjusted (at the unit that suffered the Generator Cold Weather Reliability Event as well as at other similar units with similar freeze protection measures applied to Generator Cold Weather Critical Component(s)).

The existence of a Corrective Action Plan should not discourage the GO from applying any other actions necessary and feasible to prepare a unit to perform at extreme cold weather temperatures during the Corrective Action Plan implementation period.

The 2024-03 DT also created language that allows for Corrective Action Plan extension requests using the NERC Process. ERO Enterprise staff developed the NERC Process that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule). While

TPL-007 has not been utilized extensively, the NERC Process is flexible enough to manage the expected submittals. The DT is not in control of updates to the NERC Process but the NERC staff have been engaged and responsive to industry concerns noted during the Standard development timeline. The NERC Process will allow a thorough review in a timely manner for any Corrective Action Plan extension requests including those that go beyond the 24 or 48 calendar month timetables. While there may be actions impacting the implementation and completion of Corrective Action Plans beyond the control of GOs (e.g., supply chain issues), the GOs should accelerate completion of corrective actions as much as possible to support reliable operations.

The 2024-03 DT updated language regarding Generator Cold Weather Constraints to clarify expectations. Please review Requirements R8 and R9 and Attachment 1 for further discussions of Generator Cold Weather Constraints.

In carrying out its responsibilities under Section 321 of the NERC Rules of Procedure, the Standards Committee determined to carry forward the general framework developed by the Project 2024-03 DT, with some modifications. First, to address stakeholder concerns about the lack of a clear deadline for implementing Corrective Action Plans, the Standards Committee added a deadline to develop Corrective Action Plans for units experiencing the Generator Cold Weather Reliability Event. This deadline would be the same as the date any required Corrective Action Plans for the units must be completed – by the first day of the first December following the event (or for September, October, and November events, the first day of the first December of the following calendar year). By adding this deadline, the Standards Committee intends to add clarity as to the latest date by which such Corrective Action Plans must be developed, while recognizing that the main reliability benefit will come from completing the corrective actions in an expeditious manner. As Corrective Action Plans contain important information to document causes and corrective actions that may inform future winter operations, there is still a reliability benefit to develop these Corrective Action Plans, even if any corrective actions in the Corrective Action Plan are completed in short order.

Rationale for Requirement R7

In EOP-012-2, R7 was expanded from EOP-012-1 to provide additional definition on the requirements to implement a Corrective Action Plan, and to meet the direction for this requirement set by the February 2023 FERC Order. One such direction was to define expectations on implementation timelines for Corrective Action Plans. Under EOP-012-2 R7, Corrective Action Plans were divided into two categories: 1) those which address existing freeze protection measure(s), and 2) those which require new equipment or freeze protection measure(s). The former category required completion of the Corrective Action Plan to remedy the cause(s) within 24 months, and the latter required completion of the Corrective Action Plan within 48 months. The 2021-07 DT modeled this timeline structure after similar Corrective Action Plan implementation requirements in TPL-007. These are maximum durations and entities are expected to work diligently to correct issues and take prompt actions to mitigate future issues as soon as practical. At the same time, the 2021-07 DT recognized that the following time-consuming activities make the 24 and 48 calendar months maximum timelines reasonable: scoping applicability to similar units, freeze

protection engineering and design, project development, budgeting processes, material supply lead times, outage scheduling, skilled labor availability, and startup/commissioning. However, the June 2024 Order established directives to clarify timelines and responsibilities associated with Corrective Action Plans. The 2024-03 DT chose to specifically remove Corrective Action Plan obligations for Generator Cold Weather Reliability Events and place those in Requirement R6. For Requirement 7, the 2024-03 DT provided clarifying language regarding existing and new freeze protection measures and the associated completion timelines. Language was provided for Corrective Action Plans that may include changes to existing freeze protection measures and addition of new freeze protection measures to help clarify expectations for completing the corrective actions. The Project 2024-03 DT discussed the adjectives "new" and "existing" freeze protection measures as it is used within the Requirements. If there is the failure of a freeze protection measure (e.g., heat trace) and that freeze protection measure is replaced with the same/similar/commonly used technology that is considered "existing". The change of a heat trace from 40 foot to 60 foot or change in the amperage capability of the heat trace is not a "new" freeze protection measure. A change in lightbulb wattage in an enclosure should not be considered "new". The industry did provide some examples of "new" freeze protection measures (i.e., new permanent structures or new technologies not already applied) that may take longer to implement depending upon the nature of the freeze protection measure. A wind block made of tarps and a wooden or steel frame should not be considered "new" and require 48 months to implement even if the site did not have a wind block already. Care should be exercised by GOs in the use of "new" and "existing" freeze protection measures and the resulting Corrective Action Plan timelines. Industry experience with Winter Storms URI and Elliott suggests that the shorter timelines are sufficient in general to mitigate reliability risks. Entities are expected to work diligently to correct issues and take prompt actions to mitigate future recurrence. The 2024-03 DT updated Parts 7.1.3. and 7.1.4 for completeness to ensure updates would be made to document needed changes to the cold weather preparedness plan(s) to eliminate recurrence of issue(s) identified in the Corrective Action Plan. In clarifying these timeframes, the 2024-03 DT considered the FERC directives.

Within the revised Requirement R7, the GO is required to implement the Corrective Action Plan within a timetable defined by the GO in the Corrective Action Plan but limited by maximum durations in Part 7.1. If the GO is unable to complete the Corrective Action Plan within the time limits in Part 7.1 the GO is required to request an extension for the Corrective Action Plan with justification per Part 7.2. GOs that are unable to complete the Corrective Action Plan without an extension or if an extension does not support implementation of a freeze protection measure are required under Part 7.3 to create a declaration of the Generator Cold Weather Constraint which shall be provided to the Compliance Enforcement Authority per Requirement R8. Further requirements for the Generator Cold Weather Constraints are provided under Requirements R8 and R9.

The 2024-03 DT also created language that allows for Corrective Action Plan extension requests using the NERC Process. ERO Enterprise staff developed the NERC Process that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule). The NERC Process will allow a thorough review in a timely manner for any Corrective Action Plan extension requests including those that go beyond the 24 or 48 calendar months. The 2024-03 DT utilized the

precedent set by TPL-007 to ensure the unique circumstances of each request will be considered while also avoiding potential compliance burdens which may not have a corresponding reliability benefit (e.g. specific timelines for submission and approval of extension requests). While there may be actions impacting the implementation and completion of Corrective Action Plans beyond the control of GOs (e.g., supply chain issues), the GOs should accelerate completion of corrective actions as much as possible to support reliable operations. It is expected that extension requests will be limited in nature. GOs will have to provide clear justifications with supporting materials within the extension request. Due diligence in ordering equipment, obtaining permits, etc., will be considered as part of the determination of whether a particular set of facts constitute circumstances beyond the control of the entity. Denials of extension requests will be minimized if GOs work diligently to correct issues and take prompt actions. Denial of an extension means the initial timelines for corrective actions must be met. As a result of comments received during the ROP 321 comment period, NERC staff updated the NERC Process. Several entities submitted comments emphasizing the need for consistency and transparency in Generator Cold Weather Constraint evaluations across the ERO Enterprise, or offering suggestions to improve the appeal process. These comments were shared with NERC Compliance Monitoring and Enforcement Program staff during the ROP 321 comment evaluation. NERC agreed that ensuring consistency and transparency in these determinations will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process to provide additional information on how this will be accomplished. NERC staff informed the Standards Committee that the ERO Enterprise is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of Generator Cold Weather Constraints that are and are not being validated. Guidance will include the types of documentation that would be most helpful to the entity and the ERO Enterprise to making these determinations in a timely manner.

The 2024-03 DT updated language regarding Generator Cold Weather Constraints to clarify expectations. Please review Requirements R8 and R9 for further discussions of Generator Cold Weather Constraints.

If one or more actions within a Corrective Action Plan fall under a Generator Cold Weather Constraint declaration, it is the intent of the DT that only those Generator Cold Weather Constraint affected actions would not be implemented as part of the Corrective Action Plan. The remaining corrective actions should be implemented per the timelines provided unless dependent upon the corrective action triggering the Generator Cold Weather Constraint declaration.

Rationale for Requirement R8

In the February 2023 FERC Order, the Commission expressed concern that a GO may make a Generator Cold Weather Constraint declaration without informing planning and operational entities (e.g., the BA) that are expecting the reliable operation of the generating unit to its ECWT. An additional concern was that the Generator Cold Weather Constraint declarations may be used by a functional entity as an opt-out of compliance with requirements set forth in the standards or in a corrective action plan. To mitigate the concern, the Commission directed NERC to work with Commission staff and submit a data collection and assessment plan that contains information related to GO constraint declarations and explanations

thereof. The 2021-07 DT expected that ERO Enterprise compliance staff will be responsible for reviewing declared Generator Cold Weather Constraints and assessing compliance with the Generator Cold Weather Constraint definition criteria in accordance with established processes. The June 2024 Order directives included more direct language that required NERC to receive, review, evaluate, and confirm the validity of each Generator Cold Weather Constraint in a timely manner. Additionally, the June 2024 Order directives required an increase in the frequency of reviews of Generator Cold Weather Constraints.

Matters regarding the specifics of such reviews are addressed in the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process, which is maintained separately from the standard as a compliance process. If a Corrective Action Plan extension request is denied by the CEA, then the GO may request a joint CEA/NERC review of the denial. The time to request a joint review was extended in the NERC Process based on comments received during the ROP 321 comment period.

The 2024-03 DT updated Requirement R8 to require the GO to submit, to the Compliance Enforcement Authority, a Generator Cold Weather Constraint in accordance with Attachment 1 under specific timelines. The ERO Enterprise staff have developed the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule) as a foundation for the Generator Cold Weather Constraint process. The NERC Process will allow a thorough review in a timely manner for any Generator Cold Weather Constraint submitted. The 2024-03 DT created Attachment 1 to provide clear expectations on Generator Cold Weather Constraint conditions. Attachment 1 contains some known Generator Cold Weather Constraint conditions as well as examples of other case-by-case Generator Cold Weather Constraint conditions that may also be considered valid. To be clear, all Generator Cold Weather Constraint declarations require submittal per the NERC Process. The 2024-03 DT could not create an exhaustive list of Generator Cold Weather Constraint conditions but provided language that allows professional judgement to be utilized. The 2024-03 DT believes the NERC Process in conjunction with Requirement R8 and Attachment 1 effectively meets the FERC directive regarding receiving, reviewing, evaluating, and confirming the validity of Generator Cold Weather Constraints.

To address concerns about potential administrative burdens associated with repeated, known issues at generating unit(s) with a valid Generator Cold Weather Constraint, the Project 2024-03 DT developed Part 8.4. Part 8.4 provides that, in such a case, the GO will provide notice to the CEA. This helps maintain visibility over known reliability issues while reducing the administrative burdens associated with repeating requirements in this case.

The 2021-07 DT believed that Generator Cold Weather Constraint declarations would be the exception, but it is clear to the 2024-03 DT that certain conditions may exist (based on general weather patterns) that will increase the amount of Generator Cold Weather Constraint declarations and subsequent submittals. In anticipation of that scenario, and following the June 2024 Order, the 2024-03 DT considers the NERC Process a valuable tool to capture data that may help future understanding of the effectiveness of the ECWT. The February 2023 FERC Order and subsequent NERC filing require the collection of data to evaluate the effectiveness of the EOP-012-3 Reliability Standard.

Updated Generator Cold Weather Constraint declarations would also require an update to the operating limitations provided via data specifications to the entities overseeing reliability (e.g., BA, TOP, or RC). In this manner, information relevant to valid Generator Cold Weather Constraint declarations are made available to the planning and operational entities pursuant to their data collection authority contained in TOP-003 and IRO-010. BAs, RCs, and TOPs should ensure complete coverage and timeliness of cold weather-related data submission within their data specifications especially during local forecasted cold weather.

Rationale for Requirement R9

Based on multiple comments regarding Requirement R8, the FERC directive regarding periodicity of reviews, and what a GO should do if a Generator Cold Weather Constraint is determined to be no longer valid, the 2024-03 DT developed a separate new Requirement R9.

Initially EOP-012-1 required an annual review of Generator Cold Weather Constraints. That frequency of reviews was subsequently changed to five calendar years in EOP-012-2. The June 2024 Order directed that the review frequency be increased from the five-year periodicity. While GOs should perform a review and update any Generator Cold Weather Constraint declarations as needed, the 2024-03 DT has developed language requiring a review of validated Generator Cold Weather Constraints every 36 calendar months.

Initially, the Project 2024-03 proposed that reviews be conducted every 24 calendar months. There were multiple concerns raised about the 24 calendar month periodicity. Based on consideration of these concerns, the 2024-03 DT chose, and the Standards Committee, in carrying out its responsibilities under Section 321 of the NERC Rules of Procedure, determined to carry forward the decision, to extend it to 36 calendar months. Reliability Standard CIP-014, a Reliability Standard addressing another significant risk, is proposing a review every 36 calendar months. Based on information shared at the Technical Conference held on November 12, 2024, changes to some technologies that may affect Generator Cold Weather Constraints may take a significant amount of time (well in excess of 36 months) to become available. By shortening from the five calendar years, the 36 calendar month timeline provides a reasonable approach to meeting the Commission's directives without creating undue administrative burden to periodically monitor if Generator Cold Weather Constraints remain valid or if new technologies have become available that effectively obviate the originally validated Generator Cold Weather Constraint.

Part 9.1 addresses what a GO must do if it finds that a declared Generator Cold Weather Constraint is no longer valid. For example, a new technology exists that would address the freezing issue, and no other Generator Cold Weather Constraint criteria would apply. In that case, the GO must develop a Corrective Action Plan or update an existing Corrective Action Plan (if applicable), in accordance with the requirements for Corrective Action Plans in Requirement R7. This would include timetables specifying completion of the corrective actions in accordance with that requirement.

Attachment 1

In the development of Attachment 1, the 2024-03 DT started with a list of Generator Cold Weather Constraint examples developed by the 2021-07 DT in the EOP-012-2 Technical Rationale. The foundational scenarios were presented in a way that were supportive of efforts but based on comments received the 2024-03 DT felt inclusion in the Standard to be a more effective way of memorializing the scenarios. The 2024-03 DT chose to utilize a limited and discrete list of known Generator Cold Weather Constraints as well as a description of other case-by-case situational descriptions that may constitute Generator Cold Weather Constraints. All declared Generator Cold Weather Constraints must be confirmed as valid by the Compliance Enforcement Authority. Nevertheless, the limited and discrete list is intended to describe specific circumstances that, if met, would have a very high probability of being approved. The 2024-03 DT discussed providing clarity with examples (as noted by FERC Order Paragraph 47) knowing that additional instances or conditions that may be considered a Generator Cold Weather Constraint may exist.
Per the FERC Order, NERC staff are responsible to provide a process describing the receipt, evaluation, approval (as needed), and validation of Generator Cold Weather Constraints. This process is captured in the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") document.

Once a declaration is approved by the CEA it is considered valid. Changes to valid Generator Cold Weather Constraints must be re-submitted to the CEA to remain valid. Regardless of a Generator Cold Weather Constraint being of the "known" type, a GO is still required to submit known Generator Cold Weather Constraints for approval. There were some comments received during the ROP 321 comment period that suggested automatic or limited review of "known" Generator Cold Weather Constraints. No changes were made to the Standrad or the NERC Process as those did not support directives within the June 2024 Order.

The 2024-03 DT is intentionally leaving room for additional instances of Generator Cold Weather Constraints to be presented as it would be impossible to foresee every potential set of circumstances that could possibly constitute a constraint. Several conversations occurred during public meetings that were captured within Attachment 1. The determination to include specific examples of Generator Cold Weather Constraints really depended upon industry interaction on what prevalent and reasonable issues were being presented. Some issues, such as voiding equipment warranties, may initially be considered case-by-case until such time there are clear indications from the industry (or OEMs) that application of a specific freeze protection measure would violate a warranty. No specific examples were provided by industry to label voiding a warranty as a known Generator Cold Weather Constraint. Furthermore, the 2024-03 DT wants to ensure that the Standard language supports the development and adoption of new freeze protection measures, practices, methods, or technologies while not immediately requiring that the new freeze protection measures, practices, methods, or technologies be implemented industry-wide. The 2024-03 DT encourages additional study and implementation of freeze protection measures to remove Generator Cold Weather Constraints, as appropriate, over time.

The 2024-03 DT updated the definition of Generator Cold Weather Constraints to provide clarity as directed by FERC. Additional updates to the definition were provided based on comments received during the ROP 321 comment period. In addition to modifying the definition, the 2024-03 DT developed Attachment 1 which was updated during the ROP 321 comment period. Requirement R8 provides entities a clear understanding of what is expected when managing Generator Cold Weather Constraints and directly references use of Attachment 1. The DT broadly categorized Generator Cold Weather Constraints into two types; known and those that would be determined on a case-by-case basis.

The first of the known Generator Cold Weather Constraints, addressing low temperature operability of wind turbine towers, was debated at length in the 2024-03 DT meetings. Discussion among the Drafting Team, observers, and in the Technical Conference indicated a typical limit of -22°F for operation of wind turbines. This typical limit may apply specifically to heated areas or equipment within the nacelle and not be associated with other known ductile-to-brittle transition temperatures for specific mild steel alloys used in turbine towers. Nevertheless, unless a tower is constructed of Austenitic stainless steel or other face-centered cubic atomic structure materials, such a transition temperature generally will exist. The dynamic stresses of operating the wind turbine below such transition temperatures could imperil the structure itself. Anecdotally, it was noted that this limit would cause this Constraint to apply to a portion of the north-central United States and central Canada. It was broadly recognized that the standard needs to recognize and allow this limitation for existing wind turbine tower equipment, and the DT sought to determine an appropriate date beyond which it should be expected that industry can meet low temperature operating capability. Ultimately, October 1, 2029 was established as the manufacturing limit date for compliance of new wind turbine towers. This was determined based on an accelerated interpretation of general feedback from the 2024-03 Technical Conference indicating that generational technological development cycles in the industry are on the order of 5-7 years. The October 1, 2029 date would allow four years beyond the anticipated implementation date of EOP-012-3 (October 1, 2025) for manufacturers to select, apply, test, and begin production of wind turbine towers constructed of materials capable of lower temperature operation appropriate for those locations with Extreme Cold Weather Temperatures below the limits associated with current tower material designs[10]. In addition, the 2024-03 DT also received feedback through industry outreach from participants indicating delivery and construction lead times for wind turbines were years into the future, providing additional support for the selected dates. The language in the Standard also requires those units to enter commercial operation before October 1, 2031, which prevents an entity from simply procuring an abundance of equipment prior to the manufacturing date limit (October 1, 2029) and constructing them over a long period of time in the future. The two-year gap was established to give a reasonable timeframe for entities to receive, construct, and commission the equipment. The DT felt that these dates would appropriately allow projects that are currently in different phases of planning or execution to be completed while also creating end dates beyond which wind turbine towers must be designed and erected to meet all aspects of EOP-012-3 and

[10] The DT also consulted with a representative from a wind OEM with experience in operations in Northern Europe, United States, and Canada, all areas that can experience extremely low temperatures. This representative indicated that there were no wind turbine tower designs in their current and projected future global portfolio that operate at temperatures colder than -30 degrees Celsius (-22 degrees Fahrenheit). The OEM follows IEC 61400-1 Ed 2019 (Chapter 14 Cold Climate)(https://webstore.iec.ch/en/publication/26423) and when operations as low as -30 degrees Celsius is desired, low temperature environmental modification kits are added.

this particular known Generator Cold Weather Constraint would no longer be considered valid. During the ROP 321 comment period there were a few comments regarding the timeframe to consider for wind turbines to meet the lower ECWT. One comment that might be considered in the future was that the wind turbine tower "known" Generator Cold Weather Constraint be changed to October 1, 2035, and October 1, 2037, respectively to better reflect the likely longer duration development cycle for new towers using specialty steel. The Standards Committee in the exercise of its responsibility under Section 321 of the NERC Rules of Procedure did not feel compelled to make the suggested change. The need for urgency reflected in the FERC directives in the June 2024 Order and the nature of the directives supported the decision.
The list for known Generator Cold Weather Constraints included a section devoted to the application of freeze protection measures to meet the Requirements of EOP-012. The Project 2024-03 DT initially had individually listed the scenarios but felt capturing the issues under a single scenario, the application of freeze protection measures, was better suited for the Attachment 1 material. A key to inclusion on the list was reasonableness in light of what may be available to use within the industry. Replacing wind turbine blades solely for the purpose of adding de-icing or ice-minimizing capabilities was not consider a reasonable approach. While the lack of solar-related Generator Cold Weather Constraints received a few comments during the ROP 321 comment period, no industry supplied examples were provided outside the removal of frozen precipitation provided to the Project 2024-03 DT. The Project 2024-03 DT did discuss types or techniques of removal (e.g., tilting panels if applicable, heat applications, or sweepers) and came to an understanding that some suggestions could damage the solar panel itself. Industry could supply case-by-case examples of solar-related Generator Cold Weather Constraints that may be captured in the future. Applying heat upstream of inlet air filters was noted as a particular issue for plants to incorporate. Wind turbine heat tracing or de-icing are in very early stages of use and were considered as known Generator Cold Weather Constraints by the Project 2024-03 DT. No additional comments received during the ROP 321 comment period required changes to the known list.

The case-by-case situations and circumstances that may constitute a Generator Cold Weather Constraint are described separately. The enumerated list in Attachment 1 is not intended to be exhaustive but rather to provide clear descriptions of circumstances that may constitute Generator Cold Weather Constraints depending on the facts and circumstances presented by the GO. Generator Operators bear the burden of defending and supporting their declared constraints while the ERO bears the burden of confirming them as valid, or not. While some comments received during the ROP 321 comment period noted lack of guidance provided in Attachment 1, no substantial changes were provided or discretely requested by industry. The flexibility provided in the case-by-case determinations will allow a GO to reasonably present its facts for consideration of a valid Generator Cold Weather Constraint. NERC staff updated the NERC Process, based on comments received, to support provision of information to the industry on Generator Cold Weather Constraint validation efforts.

The Project 2024-03 DT received a few examples of issues that were incorporated into the case-by-case list. It is not known how pervasive some of the case-by-case Generator Cold Weather Constraints may be in the industry. NERC committed to providing information on what the CEAs may be seeing as validation

of Generator Cold Weather Constraints occur. This may shed some light on what a more pervasive issue may be than one-off cases of Generator Cold Weather Constraints.

While the Project 2024-03 DT supports the idea that voiding an equipment warranty is an approach to applying freeze protection measures that should be avoided, no specific instances were provided to the team. To allow for the possibility that such a condition may exist, the situation was listed in the case-by-case section.
Exceeding a design limitation that would impair or degrade the effective operation of any unit is a situation that should be actively avoided. During the Project 2024-03 public discussions, the idea was brought up a few times but no specific issues were noted. Solar and battery OEMs appear to not include wind speed when determining the temperature range for operations. If issues are discovered with any type of facility, the validation efforts of the CEAs may reveal a trend worth noting to the industry.

Physical limitations for the application of freeze protection measures was discussed by the Project 2024-03 DT with the few examples provided noted in the case-by-case list. The discussions appeared to limit the population for the application of the freeze protection measures but it was important to capture.

The Project 2024-03 DT discussed analysis of freeze protection measures to determine effectiveness. There was concern by the industry that if one Generator Owner applied a particular freeze protection measure that there might be an assumption that it should be applied broadly. Innovation of freeze protection measures should not be stifled by regulatory Requirements nor should there be an assumption that the freeze protection measures will work effectively for every location. To that point the Project 2024-03 DT felt that an analysis was required to support the actions of a Generator Owner. There were a few comments received in the ROP 321 comment period regarding clarity around “generating unit(s) of comparable types in regions that experience similar winter climate conditions.” The Project 2024-03 DT included that phrasing with the understanding that entity’s would be able to clearly demonstrate why a freeze protection measure may not be effective for their unit(s). The Standards Committee in the exercise of its responsibility under Section 321 of the NERC Rules of Procedure did not feel compelled to make any changes to the phrasing. NERC may provide further guidance in the future but entities are encouraged not to over analyze the phrasing in the support of reliable operations.
Among these circumstances, the DT recognized the need to balance potential adverse effects to the Bulk Power System reliability caused by requiring implementation of a freeze protection measure with the beneficial effects of doing the same. Because such circumstances can and do change by location and over time, this weighing process is best done on a localized basis and ideally interactively between the GO and other affected functional entities while broadly considering immediate and potential future impacts of a declared constraint.

“Case-by-Case Determinations of Generator Cold Weather Constraints” 5a and 5b (accelerated premature retirement, cancellation of a planned unit) were revised based on comments received during the ROP 321 comment period. Language to require the Generator Owner to have an attestation signed by an officer

of the company to accompany its determination, made through an analysis, that the constraint applies was added. A company officer is a high-ranking individual within a corporation responsible for managing specific areas of the business. This addition was intended to address a concern about potentially questionable economic constraint declarations being submitted for CEA review. The change is not expected to meaningfully increase the administrative burden for affected Generator Owners seeking to make such a declaration.

Two additional cases seemed particularly well-suited for a threshold for quantification of impacts: those that reduce a generating unit's real or reactive power when the freeze protection measure is not in place and those that would reduce net dependable capacity during summer or at Peak Demand. These two cases are addressed in sections 5.c. and 5.d. of Attachment 1. In them, the DT has selected a value of three (3) percent, reduction as an appropriate level of impact above which the deleterious impact to the Bulk Power System resulting from requiring a specific freeze protection measure may be appropriately determined to outweigh the benefits of applying the measure. Recognizing that local and temporal conditions are best understood, measured and predicted by the GO and affected functional entities, the DT chose to allow flexibility in the selected three percent value when a different value is supported by the appropriate functional entity as more supportive of reliable operation of the grid.

In addition to being a sensible threshold, use of a three (3) percent value has precedent in BAL-002-WECC-3 where it is used as a barometer for reliable operations in terms of Contingency Reserve.

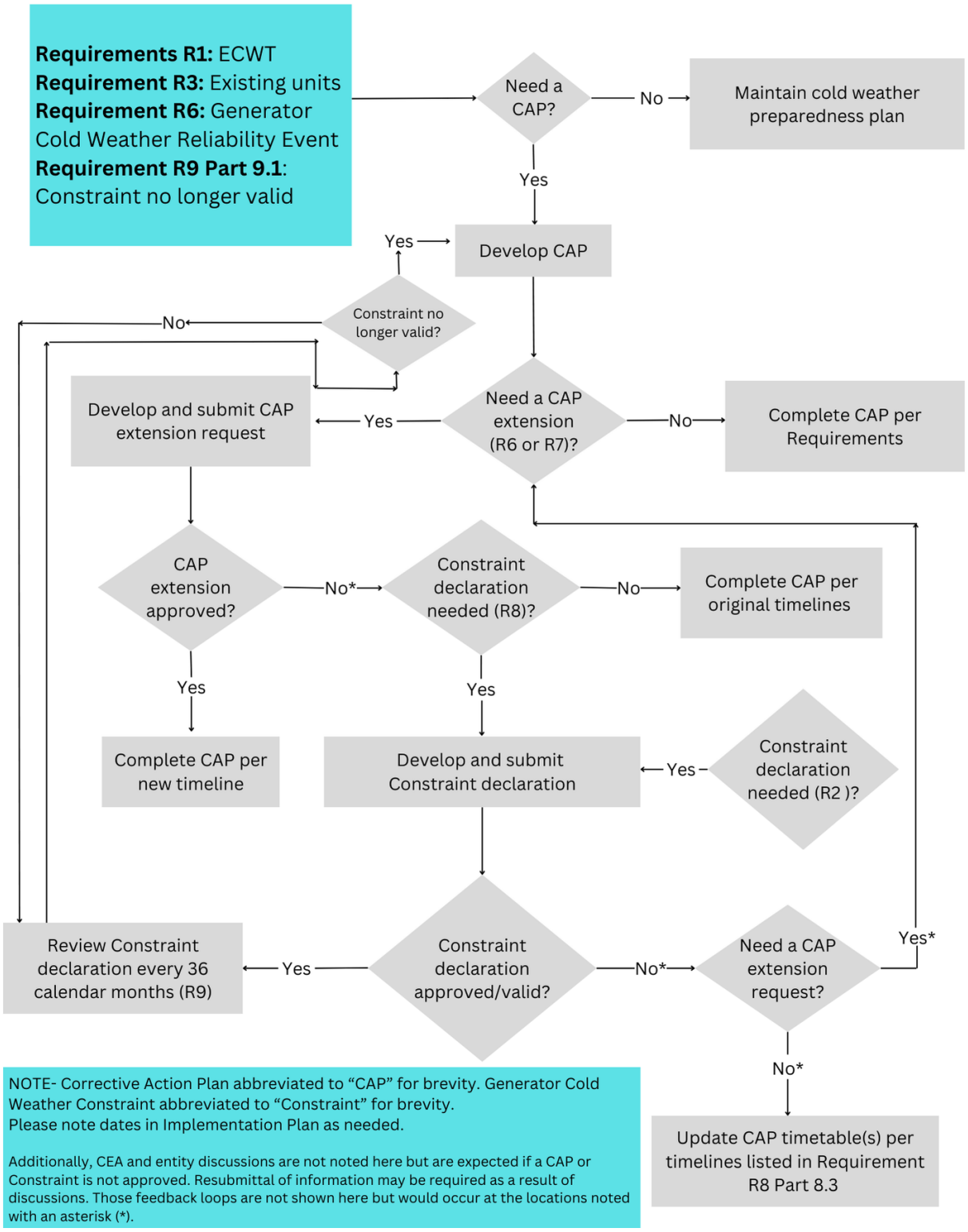
The language provided in both the known and case-by-case portions of Attachment 1 is meant to describe criteria that are objective, unambiguous, and auditable. Guidance on the Generator Cold Weather Constraints could be supported by the industry, NERC, and the Regions through various methods. It is important to work collaboratively to understand the conditions presented and be able to support validation of the Generator Cold Weather Constraints as EOP-012-3 is implemented

In all cases, when submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the GO must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the GO will apply. If a Generator Cold Weather Constraint declaration indicates that the application of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk-Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s), the documentation that defends and supports the constraint could properly include any assessment that the applicable functional entity (e.g., BA or RC) might agree to provide concerning the impact to the reliability of the Bulk-Power System if the constraint were to be deemed invalid by the CEA. Such an assessment, or other means of demonstrating agreement from an appropriate functional entity, would serve to strengthen the Generator Cold Weather Constraint declaration.

It should also be emphasized, as written in Attachment 1, that an approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the GO of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

With all Generator Cold Weather Constraints, it is the responsibility of the GO to provide supporting materials to facilitate approval and validation of the Generator Cold Weather Constraint by the ERO Enterprise. NERC staff has provided that additional guidance will be provided moving forward to support industry efforts in understanding the NERC Process. As mentioned in the Requirement R8 Technical Rational discussion, the NERC Process was developed to support the FERC directives in the June 2024 Order. The 2024-03 DT believes the new definition of Generator Cold Weather Constraint, updated language throughout the Standard with emphasis on Requirement R8, and the contents of Attachment 1 provide significant clarity to industry on what is expected for Generator Cold Weather Constraints to be considered valid.

EOP-012-3 Process Flow Chart: Below is a graphical representation demonstrating the relationship between Requirements:



NERC
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Exhibit E
Consideration of Directives

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Directives from FERC June 2024 Order Approving EOP-012-2 and Directing Further Revisions

Project 2024-03 Revisions to EOP-012-2

Summary

This mapping document summarizes how the Project 2024-03 drafting team (DT), and the Standards Committee in carrying out its responsibilities under Section 321 of The North American Electric Reliability Corporation (NERC) Rules of Procedure, considered The Federal Energy Regulatory Commission's (FERC's) directives for further revisions to Reliability Standard EOP-012-2 in its June 27, 2024 approval order[1] when drafting proposed EOP-012-3.

Paragraph 47 – Address Ambiguities Regarding the term Generator Cold Weather Constraint and Criteria

Directive

"Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit to the Commission for approval modifications to proposed Reliability Standard EOP-012-2 that address concerns related to the ambiguity of the newly defined Generator Cold Weather Constraint term and criteria. Specifically, we direct NERC to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective *and* sufficiently detailed so that applicable entities understand what is required of them. One approach to satisfy this directive could be to incorporate into the proposed Reliability Standard a limited and discrete list of circumstances that would qualify as acceptable constraints. We note that NERC's technical rationale document, created by NERC's Standard Drafting Team(SDT) and included in NERC's filing, includes a list of technical constraints that could serve as a starting point for a list of circumstances that would qualify as acceptable constraints. To the extent that NERC continues to believe that the extent of industry adoption for winterization technologies should be a criterion for declaring a constraint, NERC should clearly explain in its filing how it will assess the extent of such adoption in a way that provides for consistent compliance and enforcement outcomes. Alternatively, NERC could establish a pre-approval process for all Generator Cold Weather Constraint declarations. While a clearly defined list may be preferable, a pre-approval

[1] *N. Am. Elec. Reliability Corp.*., 187 FERC ¶ 61,204 (2024) ("June 2024 Order"). In this document, internal citations included within the cited text of the FERC order are omitted.

process could be established to ensure entities' declared Generator Cold Weather Constraints are appropriate and can be supported and defended. Further, as part of the directive to develop and submit modifications to the Generator Cold Weather Constraint definition of proposed Reliability Standard EOP-012-2, we direct NERC, pursuant to section 215(d)(5) of the FPA, to remove the references to "cost," "reasonable cost," "unreasonable cost," and "good business practices" and replace them with criteria that are objective, unambiguous, and auditable. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
Generator Cold Weather Constraint - Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions. Criteria used to determine a constraint include practices, methods, or technologies which, given the exercise of reasonable judgment in light of the facts known at the time the decision to declare the constraint was made: • Were not broadly implemented at generating units for comparable unit types in regions that	**Generator Cold Weather Constraint** - Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would be expected to result in improved generating unit performance during cold temperatures. **** **R8.** Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: **8.1.** Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows:	Proposed EOP-012-3 along with the modified definition of Generator Cold Weather Constraint removes all of the references to "reasonable cost," "unreasonable cost," "cost," and "good business practices" consistent with the FERC directive. The definition of Generator Cold Weather Constraint now refers generally to a condition that would preclude implementing freeze protection measures, clarifying that freeze protection measures are not limited to just optimum solutions but any solution that may be effective for improving performance. Proposed EOP-012-3 adds Attachment 1, referenced in Requirement R8 and R9, to define the criteria by which a valid Generator Cold Weather Constraint may exist. Attachment 1 consists of:

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
experience similar winter climate conditions to provide reasonable assurance of efficacy; • Could not have been expected to accomplish the desired result; or Could not have been implemented at a reasonable cost consistent with good business practices, reliability, or safety. A cost may be deemed "unreasonable" when implementation of selected freeze protection measure(s) are uneconomical to the extent that they would require prohibitively expensive modifications or significant expenditures on equipment with minimal remaining life. *** **R8.** Each Generator Owner that creates a Generator Cold Weather Constraint declaration shall: **8.1**. Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and **8.2**. Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable.	• For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or • For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable. **8.2.** Update the operating limitations under Requirement R1 Part R1.2 if applicable; **8.3.** If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2;	1. Known Generator Cold Weather Constraints, consisting of circumstances which, if present and confirmed as valid by the Compliance Enforcement Authority, would constitute Generator Cold Weather Constraints; and 2. Case-by-case Determinations of Generator Cold Weather Constraints, consisting of situations which may constitute Generator Cold Weather Constraints, depending on the specific facts and circumstances. Only upon approval by the Compliance Enforcement Authority would these circumstances comprise a valid Generator Cold Weather Constraint under Requirement R8. Attachment 1 provides significant clarity on the conditions or issues that may constitute a valid Generator Cold Weather Constraint. The criteria are intended to be objective, unambiguous, and auditable. The standard retains flexibility to address potentially valid constraints that are not specifically defined in the standard through the Compliance Enforcement Authority review process. Please refer to the Technical Rationale for additional supporting information.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	8.4. Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event with the same cause of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause is addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit. **** **Attachment 1** (criteria for determining the applicability of a Generator Cold Weather Constraint) (*see standard*)	

Paragraph 54: Address Concerns Regarding the Need for a Timely Review and Evaluation of Declared Generator Cold Weather Constraints by NERC

Directive

"Accordingly, we again direct NERC, pursuant to section 215(d)(5) of the FPA, to modify proposed Reliability Standard so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner. We also direct NERC to include in its compliance filing, a plan to timely review such declarations to verify compliance with proposed Reliability Standard EOP-012-2 and its successors or obligations in a corrective action plan and take corrective action where necessary. For example, modifying Standard to require the generator owners to provide declarations (or changes to the declarations) to NERC within 45 days. It is up to NERC whether it would like to delegate this task to the relevant Regional Entities. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R8. Each Generator Owner that creates a Generator Cold Weather Constraint declaration shall: **8.1**. Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and **8.2**. Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable.	**R8.** Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: **8.1.** Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows: • For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or	Requirement R8 would require the Generator Owner declaring a Generator Cold Weather Constraint in accordance with Attachment 1 to submit that constraint to its Compliance Enforcement Authority within 45 days of determining that a Generator Cold Weather Constraint is applicable (for new units, this time is within 15 days of entering commercial operation). This requirement helps ensure the timely submission of constraints to the Compliance Enforcement Authority, which may be NERC or the Regional Entity, for review and approval.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	• For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable. **8.2.** Update the operating limitations under Requirement R1 Part R1.2 if applicable; **8.3.** If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2; **8.4**. Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event with the same cause of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause is addressed by an existing validated	Attachment 1 contains a list of known Generator Cold Weather Constraints as well as a list of situations, circumstances, and criteria that may constitute a Generator Cold Weather Constraint for which a Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply to the Compliance Enforcement Authority for approval. If the Generator Cold Weather Constraint is determined to be invalid by the Compliance Enforcement Authority, the Generator Owner must update its Corrective Action Plan and implement according to the standard timelines, beginning from the date of notification. As NERC and the Regional Entities are not users, owners, nor operators of the BPS, provisions for the timeliness of Compliance Enforcement Authority review are not included in EOP-012-3. Additional support and detail for how the Compliance Enforcement Authority will review constraints in a timely manner consistent with the FERC directive is provided in the Generator Cold Weather CAP Extension and Constraint Process.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	Generator Cold Weather Constraint for the same or a similar unit. **** **Attachment 1** (criteria for determining the applicability of a Generator Cold Weather Constraint) (*see standard*)	

Paragraph 68 - Address Concerns that Existing EOP-012-2 Requirement R7 Allows Too Long for Entities to Implement Corrective Actions for Existing or New Equipment or Freeze Protection Measures for those Generating Units that Experience a Generator Cold Weather Reliability Event

Directive

"Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. Based on compliance with Requirements R2 and R3, those generating units should have already had appropriate freeze protection measures implemented to be capable of operating at the generating units' respective Extreme Cold Weather Temperature. Therefore, we find that a shorter timeframe to implement corrective actions that address existing or new equipment or freeze protection measures is appropriate. For example, to satisfy this directive, NERC could require generator owners to implement corrective actions prior to the next winter season for generating units that experience a Cold Weather Reliability Event and to complete freeze protection measures on similar equipment on all of its fleet within 24 months of becoming aware of the freeze issue. For corrective action plans that involve larger and more complicated implementations, NERC could incorporate a staggered 48-month corrective action plan implementation deadline."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R6. Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed	**R6.** Each Generator Owner shall, when experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop	To address this directive, proposed EOP-012-3 revises Requirement R6 to specify shorter implementation timeframes at generating units experiencing a Generator Cold Weather Event, and removes references to this requirement under Requirement R7, which previously addressed all Corrective Action Plans developed under the EOP-012-2 standard. For Generator Owners experiencing a Generator Cold Weather Event, Corrective Action Plans

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
within 150 days or by July 1, whichever is earlier, and contain at a minimum: **6.1.** A summary of the identified cause(s) for the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data; **6.2.** A review of applicability to similar equipment at generating units owned by the Generator Owner; and **6.3.** An identification of operating limitations or impacts to the cold weather preparedness plan that would apply until execution of the corrective action(s) identified in the Corrective Action Plan. **R7**. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, R3, or R6, shall: **7.1**. Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1**. List the action(s) which address(es) existing equipment or freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan; **7.1.2**. List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar months of completing development of the Corrective Action Plan; and	and implement a Corrective Action Plan(s) to address identified issues as follows: **6.1**. The Generator Owner shall develop a Corrective Action Plan for the generating unit that experienced a Generator Cold Weather Reliability Event no later than prior to the first day of the first December following the Generator Cold Weather Reliability Event.[Fn9] **6.2.** The Generator Owner shall conduct a review of the other generating unit(s) in its fleet with the same or similar equipment as the affected generating unit to determine if any of those generating unit(s) are susceptible to the identified freezing issues. If corrective actions are needed, the Generator Owner shall develop or update a Corrective Action Plan to address the other generating unit(s). This review and, if applicable, the development or update of any Corrective Action Plan(s), shall be completed no later than 12 calendar months following the Generator Cold Weather Reliability Event.	must specify implementation of corrective actions at the affected unit (i.e. the one experiencing the event) by no later than the first day of the first December following the event. For events occurring in September, October or November (i.e. prior to December 1), corrective actions shall be implemented prior to the first day of December in the following calendar year. The focus of revised EOP-012-3 Requirement R6 is on the timely completion of corrective actions addressing known freezing issues, rather than the timely development of the Corrective Action Plan document itself. However, for clarity, Requirement R6 Part 6.1 specifies that the Corrective Action Plan(s) itself must be developed by no later than the implementation deadline to ensure that identified issues and the corrective actions taken to address them are memorialized. Recognizing that similar units may be subject to similar issues, Generator Owners must perform a review of applicability to similar equipment at their other units. This review must be completed within 12 months of the Generator Cold Weather Reliability Event. Requirement R6 Part 6.3.5.2 would provide that entities must implement any corrective measures within 24 calendar months of completing this review, or

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
7.1.3. List the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; **7.2**. Implement the Corrective Action Plan in accordance with the specified timetables in Requirement R7 Part 7.1; **7.3**. Update the Corrective Action Plan action(s) and timetable(s), with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and **7.4**. Document in a declaration, with justification, any Generator Cold Weather Constraint that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.	**6.3.** For each Corrective Action Plan, the Generator Owner shall include at a minimum: **6.3.1.** A summary of the identified cause(s) of the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data; **6.3.2.** A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures; **6.3.3.** An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed; **6.3.4.** A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components	by no later than 36 months following the Generator Cold Weather Reliability Event. In developing these timelines, the drafting team and the Standards Committee considered multiple stakeholder comments suggesting that a 24-month timeline to implement corrective actions measured from the date of the event for similarly affected units would not be practical and may be unduly burdensome. The drafting team and the Standards Committee also considered the difficulties of defining, with specificity, the circumstances that would constitute "larger and more complicated implementations" – which FERC suggested may warrant a longer implementation period than provided in draft EOP-012-3 (e.g. 48 months compared to up to 36 months in EOP-012-3). To address these considerations, EOP-012-3 provides a uniform implementation period that incentivizes entities to understand the extent of condition across their fleets as soon as possible after the event and provides a definitive and reasonably expeditious timeline for completion. To the extent circumstances beyond the control of the Generator Owner prevent implementation within these timeframes, Requirement R6 Part 6.4 provides a process by which the Generator Owner may seek an

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	and their freeze protection measures, if required; and **6.3.5.** A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows **6.3.5.1.** For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event. [Fn10] **6.3.5.2.** For other generating unit(s) owned by the Generator Owner, within 24 calendar months of completing the review required in Part 6.2, or no later than 36 months following the Generator Cold Weather Reliability Event. **6.4** If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances	extension from the Compliance Enforcement Authority. This process is similar to that included in Requirement R7, discussed more fully in the following section. This provision addresses those larger and more complicated implementations for which even an up to 36 months implementation deadline may not be feasible.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval. The submitted Corrective Action Plan extension request shall include the following: **6.4.1.** An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner; **6.4.2.** Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and **6.4.3.** Updated timetable for implementing the selected actions in Part 6.3.2. **6.5** The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, as applicable.	

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	[Fn9/Fn10]: For events that occur in September, October or November, the timetable shall specify completion prior to December 1 of the following calendar year. **** **R7.** Each Generator Owner that is required to develop a Corrective Action Plan under Requirements R1, R3, or R9 shall develop and implement the Corrective Action Plan in accordance with the following:	

Paragraph 70: Address the Finding that Any Extensions of a Corrective Action Plan Implementation Deadline Beyond the Maximum Implementation Timeframe Provided by the Standard be Pre-Approved by NERC

Directive

"Therefore, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC. This approach is consistent with prior Commission action in Order No. 851 where the Commission directed NERC to require pre-approval for extensions beyond the timelines required in the Reliability Standard. In Order No. 851, the Commission explained that although case-by-case extension determinations may be more uncertain or have associated burdens, the more compelling imperative is that automatic extensions have the potential for abuse by unduly delaying mitigation, and would lead to delayed visibility for NERC."

See also P 3 (summarizing directives): "[W]e direct NERC to:… develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the Standard is pre-approved by NERC and to ensure that the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R6. Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability	**6.4** If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority for	To address this directive, proposed EOP-012-3 adds new Requirement R6, Part 6.4, and Requirement R7 Part 7.2 to require any Generator Owner seeking to extend a Corrective Action Plan implementation deadline beyond the maximum implementation timeframe required by the standard seeks pre-approval of the extension by the Compliance Enforcement Authority. This language is similar to that used in

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
Event. The Corrective Action Plan shall be developed within 150 days or by July 1, whichever is earlier, and contain at a minimum: **6.1.** A summary of the identified cause(s) for the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data; **6.2.** A review of applicability to similar equipment at generating units owned by the Generator Owner; and **6.3.** An identification of operating limitations or impacts to the cold weather preparedness plan that would apply until execution of the corrective action(s) identified in the Corrective Action Plan. **** **R7**. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, R3, or R6, shall: **7.1**. Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1**. List the action(s) which address(es) existing equipment or freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan; **7.1.2**. List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar	approval. The submitted Corrective Action Plan extension request shall include the following: **6.4.1.** An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner; **6.4.2.** Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and **6.4.3.** Updated timetable for implementing the selected actions in Part 6.3.2. **** **7.1.** For each Corrective Action Plan, the Generator Owner shall include at a minimum the following: *** **7.1.4.** An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective	the TPL-007 standard, and the ERO Enterprise would follow a similar review process. With respect to that part of Paragraph 3 relating to "ensuring the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension": Under EOP-012-3 Requirement R6 Part 6.3.3, pertaining to units experiencing a Generator Cold Weather Event, the Generator Owner would be required to identify operating limitations that would apply until execution of the Corrective Action Plan. Under EOP-012-3 Requirements R2 and R3, a Corrective Action Plan would be required where the Generator Owner cannot meet the required operational capability for its unit. Requirement R7 Part 7.1 addresses what generators must include in their Corrective Action Plans, including operating limitations that apply until implementation of the corrective actions is completed (Part 7.1.4). The TOP-003 and IRO-010 standards require the Transmission Operator, Balancing Authority, and Reliability Coordinator to maintain data specifications for their real-time and operational

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
months of completing development of the Corrective Action Plan; and **7.1.3**. List the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; **7.2**. Implement the Corrective Action Plan in accordance with the specified timetables in Requirement R7 Part 7.1; **7.3**. Update the Corrective Action Plan action(s) and timetable(s), with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and **7.4**. Document in a declaration, with justification, any Generator Cold Weather Constraint that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.	action(s) identified in the Corrective Action Plan is completed. **7.2.** If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R7 Part 7.1 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following: **7.2.1.** An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner; **7.2.2.** Revisions to the selected actions in Parts 7.1, if any, including utilization of operating procedures, if applicable; and **7.2.3.** Updated timetable for implementing the selected actions in Part 7.1.	planning analyses that include provisions for notification of BES generating unit(s) status during local forecasted cold weather to include operating limitations based on capability and availability, among other factors. These standards require the Generator Owner to provide the requested data. Additionally, other mechanisms that reliability entities have for obtaining up-to-date information on the status and availability of generators was discussed during the development process. It was also considered that, under Reliability Standard TOP-002-5 Requirement R8, each Balancing Authority is required to have an extreme cold weather Operating Process that takes into consideration capability and availability concerns, considering generating operating limitations from previous cold weather periods. After considering these standards, it was determined that no additional requirement would be needed to ensure the “generator owner informs relevant registered entities of operating limitations in extreme cold weather” specifically during the period of Corrective Action Plan extension. Operating limitations should be communicated through other mechanisms regardless of whether those

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
		operating limitations apply generally, during the time period provided in the Corrective Action Plan for implementation, or the period provided authorized by the CEA for an extension. To the extent a Transmission Operator, Balancing Authority, or Reliability Coordinator would find the additional detail useful (i.e. that the operating limitation applies during a Corrective Action Plan extension), it may request this information as part of its data specifications, and the Generator Owner would be required to provide it. However, a requirement in EOP-012-3 for the Generator Owner to provide this information through a separate mechanism, absent a communicated need, may not provide any reliability benefit.

Paragraph 72: Address the Finding that Generators that are First Commercially Operational on or after October 1, 2027, Should Have Freeze Protection Measures Either Designed into Their Generating Systems, or, if a Corrective Action Plan is Needed, then It Should be Completed by the Time that Such Generating Units Go into Commercial Operation.

Directive

"We thus find that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to clarify that any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R2. Applicable to generating units with a commercial operation date on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), shall: • Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum	**R2.** Applicable to generating units that begin commercial operation on or after October 1, 2027[fn2]: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), shall: • Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)'	To address this directive, proposed EOP-012-3 revises Requirement R2 which pertains to units going into commercial operation after October 1, 2027. Requirement R2 would require that a Generator Owner with a generating unit entering commercial operation on or after October 1, 2027 shall either implement the required capability or declare a Generator Cold Weather Constraint, if applicable. A new footnote is added to clarify that the October 1, 2027 date may be different in non-U.S. jurisdictions.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
operational duration for intermittent energy resources if less than twelve (12) continuous hours; or • Develop a Corrective Action Plan(s) to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours.	Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or • Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8. [fn2]: In non-U.S. jurisdictions, this will be the date established by the Applicable Governmental Authority.	There is no requirement to implement a Corrective Action Plan prior to entering commercial operation, as there were concerns raised about potential retroactive applicability of such a requirement (i.e. applying standards prior to registration for mandatory compliance purposes). However, the practical effect is the same: the entity must either implement the required capability or delay its commercial operation date until it is able to do so. Prior EOP-012 drafting teams believed that there needs to be allowances made for units that are far along in the development process, but do not expect to achieve commercial operation prior to October 1, 2027. It was discussed that some plants may take five years or more to complete construction and enter commercial operation, with significant investments in design occurring early in the process. After a certain point, changing such designs (if allowed) may subject the entity to significant added costs, delays, or both. While not changing the October 1, 2027 date as the date after which new units must meet the more stringent requirements for new generation, the implementation plan for proposed EOP-012-3 provides a slightly longer

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
		phased-in compliance deadline for units meeting certain criteria. This phased-in compliance date would help accommodate the units that are thought to be much further along in the process of development and for whom the revised requirement might represent a significant hardship, while overall raising the bar for reliability. . Additional information and background are available in the Technical Rationale for proposed EOP-012-3.

Paragraph 76: To Address Concerns that EOP-012-2 Requirement R7 has Ambiguities in the Implementation Plan Timelines that Apply to Certain Generator Owners

Directive

"We believe that proposed Reliability Standard EOP-012-2, Requirement R7's corrective action plan implementation deadlines have remaining ambiguities that need to be addressed. As noted above, the Commission has previously expressed similar concerns regarding the vagueness and enforceability of Reliability Standards language. Specifically, we agree with the concerns raised by the ISO/RTO Council that Requirement R7 of proposed Reliability Standard EOP-012-2 does not provide clear direction as to the required corrective action plan implementation timeline that applies to certain generator owners. For example, it is unclear how the corrective action plan implementation timeline would apply if a generator owner had combinations of both existing and new equipment for freeze protection measures. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to address these ambiguities by expanding on Requirement R7.1.1 and 7.1.2 to make it clear which corrective action plan implementation deadline applies to which generator owner."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R7. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, R3, or R6, shall: **7.1**. Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1**. List the action(s) which address(es) existing equipment or freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan; **7.1.2**. List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar	**6.3.5.** A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows **6.3.5.1.** For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.[fn10] **6.3.5.2.** For other generating unit(s) owned by the Generator Owner,	To address this directive, proposed EOP-012-3 includes Corrective Action Plan timelines in Requirement R6 Part 6.3.5 for Corrective Action Plans developed due to experiencing a Generator Cold Weather Reliability Event which require corrective actions be completed no later than the first day of the first December following the event. For events occurring early in the season (i.e. prior to December 1), corrective actions shall be implemented prior to December 1 of the next calendar year following the event.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
months of completing development of the Corrective Action Plan; and **7.1.3**. List the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures;	within 24 calendar months of completing the review required in Part 6.2, or no later than 36 months following the Generator Cold Weather Reliability Event. **** **R7.** Each Generator Owner that is required to develop a Corrective Action Plan under Requirements R1, R3, or R9 shall develop and implement the Corrective Action Plan in accordance with the following: **7.1.** For each Corrective Action Plan, the Generator Owner shall include at a minimum the following: **7.1.1.** A list of any actions that require new freeze protection measures, with a timetable specifying completion of such measures within 48 calendar months of completing development of the Corrective Action Plan; **7.1.2.** A list of any actions that remedy issues with existing freeze protection measures with a timetable specifying completion of such measures within 24 calendar months of	Recognizing that similar units may be subject to similar issues, Generator Owners must perform a review of applicability to similar equipment at their other units. Revised Requirement R6 Part 6.3.5.2 would allow the entity to perform this review within 12 calendar months and implement any corrective measures within 24 calendar months of completing this review, or no later than 36 months following the Generator Cold Weather Reliability Event. These revisions provide enhanced specificity regarding the timelines for completing corrective actions in a Corrective Action Plan, with more urgent deadlines to address freezing issues that were identified following a reliability event. Additionally in Requirement R7 Part 7.1.2, the phrase “regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures” was added to clarify that actions to address issues with existing freeze protection measures must still be completed within 24 months, even if separate actions to implement new freeze protection measures have a longer timeframe. Additional information regarding what may be considered a “new” freeze protection measure and what may be considered an “existing” freeze protection measure is provided in the

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	completing development of the Corrective Action Plan (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures); ***	Technical Rationale. In summary, if there is a failure of a freeze protection measure (e.g., heat trace) and that freeze protection measure is replaced with the same/similar/commonly used technology, that would be considered "existing". Similarly, replacing a component of an existing system would be considered addressing issues with "existing" freeze protection measures. Examples of "new" freeze protection measures may include new permanent structures or new technologies not already applied. It is thought that the industry generally understands the distinction between "new" and "existing" in this context, but the additional support in the Technical Rationale should further clarify the matter consistent with the FERC directive and help ensure that the longer timeframes are only used where appropriate to the scope of work required for implementation.

Paragraph 94: To address the concern that Generator Cold Weather Constraint Declarations Should be Reviewed More Frequently than Once Every Five Years to Ensure the Constraint Remains Valid

Directive

"We agree with the ISO/RTO Council that the proposed five-year review period for the declared Generator Cold Weather Constraints in Requirement R8.1 could delay the identification and adoption of new freeze protection measures and does not represent the current pace of technological advancements. We acknowledge that a more frequent review does impose some additional administrative burden to the generator owner to review the technological advancements that hindered its ability to winterize; nonetheless, a lengthy period between a Generator Cold Weather Constraint declaration review by the generator owner offers little incentive to timely adopt new freeze protection technologies. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R8, Part 8.1 of proposed Reliability Standard EOP 012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations to verify that the declaration remains valid. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R8. Each Generator Owner that creates a Generator Cold Weather Constraint declaration shall: **8.1**. Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and **8.2**. Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable.	**R9.** The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. **9.1** If a Generator Cold Weather Constraint is determined to be no longer valid, then within six (6) calendar months of such determination, the Generator Owner shall develop or update a Corrective	To address this directive, proposed EOP-012-3 adds Requirement R9 to require review of all validated Generator Cold Weather Constraints at least once every 36 calendar months to ensure the constraint remains valid. Language regarding reviews "as needed when a change of status" occurs was removed due to the more frequent periodicity. This timeline was based on consideration of stakeholder comments regarding the optimal timeframe for such reviews, considering the pace that new technologies are brought to market. By shortening from five calendar years, the 36

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	Action Plan pursuant to Requirement R7. **** **Attachment 1** (criteria for determining the applicability of a Generator Cold Weather Constraint) (*see draft standard*)	calendar month timeline provides a reasonable approach to meeting the Commission's directives without creating undue administrative burden to periodically monitor if Generator Cold Weather Constraints remain valid or if new technologies have become available that effectively obviate the originally validated constraint. Part 9.1 clarifies the Generator Owner's obligations in the event the constraint is determined to be no longer valid. For example, a new freeze protection technology is developed that would address the issue, or circumstances change such that the implementation of an existing measure would no longer cause the plant to retire prematurely. The Generator Owner must then develop or update an existing Corrective Action Plan to specify implementation of the freeze protection measures according to the timelines provided in Requirement R7, along with the other required elements. This provision helps ensure that entities are taking timely action, if circumstances change, such that a constraint is no longer appropriate under the standard. If an entity determines that another category of Generator Cold Weather Constraint would apply based on the facts and circumstances, it may declare that constraint and submit it to the

Consideration of Directive in EOP-012-3		
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		Compliance Enforcement Authority for review as if it were a new constraint.

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Exhibit F
Order No. 672 Criteria

EXHIBIT F

Order No. 672 Criteria

In Order No. 672,[1] the Commission identified a number of criteria it will use to analyze Reliability Standards proposed for approval to ensure they are just, reasonable, not unduly discriminatory or preferential, and in the public interest. The discussion below identifies these factors and explains how the proposed Reliability Standard has met or exceeded the criteria.

1. Proposed Reliability Standards must be designed to achieve a specified reliability goal and must contain a technically sound means to achieve that goal.[2]

Proposed Reliability Standard EOP-012-3 would advance the reliability of the Bulk-Power System ("BPS") through improved generator cold weather preparedness requirements. NERC initially developed the EOP-012 Reliability Standard to address recommendations from the FERC, NERC, and Regional Entity Staff report examining the causes of the February 2021 cold weather event affecting the south central United States.[3] One of the key causes of this event was that generators, unprepared for cold weather, failed in large numbers.[4] The proposed Reliability

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[1] *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672, 114 FERC ¶ 61,104, *order on reh'g*, Order No. 672-A, 114 FERC ¶ 61,328 (2006) [hereinafter Order No. 672].

[2] *See* Order No. 672, *supra* note 1, at P 321 ("The proposed Reliability Standard must address a reliability concern that falls within the requirements of section 215 of the FPA. That is, it must provide for the reliable operation of Bulk-Power System facilities. It may not extend beyond reliable operation of such facilities or apply to other facilities. Such facilities include all those necessary for operating an interconnected electric energy transmission network, or any portion of that network, including control systems. The proposed Reliability Standard may apply to any design of planned additions or modifications of such facilities that is necessary to provide for reliable operation. It may also apply to Cybersecurity protection.").

See Order No. 672, *supra* note 1, at P 324 ("The proposed Reliability Standard must be designed to achieve a specified reliability goal and must contain a technically sound means to achieve this goal. Although any person may propose a topic for a Reliability Standard to the ERO, in the ERO's process, the specific proposed Reliability Standard should be developed initially by persons within the electric power industry and community with a high level of technical expertise and be based on sound technical and engineering criteria. It should be based on actual data and lessons learned from past operating incidents, where appropriate. The process for ERO approval of a proposed Reliability Standard should be fair and open to all interested persons.").

[3] FERC, NERC, Regional Entity Staff Report: *The February 2021 Cold Weather Outages in Texas and the South Central United States* (Nov. 2021), https://www.ferc.gov/media/february-2021-cold-weather-outages-texas-and-south-central-united-states-ferc-nerc-and [hereinafter Joint Inquiry Report].

[4] *Id.* at 11-12.

Standard includes a comprehensive framework of requirements addressing generator cold weather preparedness. This framework includes requirements for: (i) freeze protection measures for both new and existing BES generating units that operate on a routine basis in freezing temperatures; (ii) the development of enhanced cold weather preparedness plans and annual training on those plans for all BES generating units; and (iii) the development and implementation of Corrective Action Plans to address known freezing issues or issues with applying the required freeze protections to provide the capability to operate. The Commission has previously approved this general framework with directives for further revisions in its orders approving Reliability Standards EOP-012-1[5] and EOP-012-2.[6]

Proposed Reliability Standard EOP-012-3 would further improve upon the currently effective Reliability Standard EOP-012-2 through enhanced and expanded requirements that would ensure that entities are implementing corrective actions to address known issues affecting their ability to operate reliability in cold weather in a timely manner. For those circumstances in which implementing corrective actions may not be feasible, referred to in the proposed standard as "Generator Cold Weather Constraints," proposed Reliability Standard EOP-012-3 would provide an improved framework for the identification, validation, and periodic review of such constraints. Consistent with the Commission's directives in its June 2024 Order, this framework provides clear, detailed, and objective criteria so responsible entities understand the performance that is expected of them.

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[5] The Commission approved Reliability Standards EOP-011-3 and EOP-012-1 in February 2023 with directives for further modifications to EOP-012-1. *N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094 [hereinafter February 2023 Order], *reh'g denied*, 183 FERC ¶ 62,034, *order addressing arguments raised on reh'g*, 183 FERC ¶ 61,222 (2023).

[6] *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61,204 (2024) (approving Reliability Standard EOP-012-2 and directing further revisions) [hereinafter June 2024 Order].

For the reasons stated more fully in the main filing, the proposed Reliability Standard is designed to achieve a specific reliability goal (improved cold weather preparedness), and it contains a technically sound means to achieve that goal through requirements addressing the implementation of freeze protection measures to provide capability to operate at a statistically extreme cold weather temperature, requirements to address any freezing-related issues that later occur, and requirements to develop a cold weather preparedness plan and provide training on that plan to relevant personnel.

2. Proposed Reliability Standards must be applicable only to users, owners, and operators of the bulk power system, and must be clear and unambiguous as to what is required and who is required to comply.[7]

The proposed Reliability Standard is clear and unambiguous as to what is required and who is required to comply, in accordance with Order No. 672. Proposed Reliability Standard EOP-012-3 would apply to Generator Owners and Generator Operators owning or operating applicable Facilities. As with currently effective Reliability Standard EOP-012-2, where BES generating units that do not generally operate in freezing conditions are exempted from requirements to implement freeze protection measures, proposed Reliability Standard EOP-012-3 provides clear language to that effect in the specific requirements.

The proposed Reliability Standard clearly articulates the actions that applicable entities must take to comply with the standard. Consistent with the Commission's directives in the June 2024 Order, proposed Reliability Standard EOP-012-3 would improve and clarify upon requirements addressing the timing of completing Corrective Action Plans where required under

[7] *See* Order No. 672, *supra* note 1, at P 322 ("The proposed Reliability Standard may impose a requirement on any user, owner, or operator of such facilities, but not on others.").

See Order No. 672, *supra* note 1, at P 325 ("The proposed Reliability Standard should be clear and unambiguous regarding what is required and who is required to comply. Users, owners, and operators of the Bulk-Power System must know what they are required to do to maintain reliability.").

the standard. Proposed Reliability Standard EOP-012-3 would also further define the circumstances under which a Generator Owner may declare constraints that preclude them from implementing one or more corrective actions to address freezing issues (Generator Cold Weather Constraints).

3. A proposed Reliability Standard must include clear and understandable consequences and a range of penalties (monetary and/or non-monetary) for a violation.[8]

The Violation Risk Factors ("VRFs") and Violation Severity Levels ("VSLs") for the proposed Reliability Standard comport with NERC and Commission guidelines related to their assignment, as discussed further in Exhibit G. The assignment of the severity level for each VSL is consistent with the corresponding requirement, and the VSLs should ensure uniformity and consistency in the determination of penalties. The VSLs do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations. For these reasons, the proposed Reliability Standard includes clear and understandable consequences in accordance with Order No. 672.

[8] *See* Order No. 672, *supra* note 1, at P 326 ("The possible consequences, including range of possible penalties, for violating a proposed Reliability Standard should be clear and understandable by those who must comply.").

4. A proposed Reliability Standard must identify clear and objective criteria or measures for compliance, so that it can be enforced in a consistent and non-preferential manner.[9]

The proposed Reliability Standard contains measures that support each requirement by clearly identifying what is required and how the requirement will be enforced. These measures help provide clarity regarding how the requirements would be enforced and help ensure that the requirements would be enforced in a clear, consistent, and non-preferential manner and without prejudice to any party.

5. Proposed Reliability Standards should achieve a reliability goal effectively and efficiently, but do not necessarily have to reflect "best practices" without regard to implementation cost or historical regional infrastructure design.[10]

The proposed Reliability Standard achieves its reliability goals effectively and efficiently in accordance with Order No. 672. Proposed Reliability Standard EOP-012-3 would achieve the reliability goal of improving generator preparedness for cold weather, while recognizing that what constitutes "cold weather" varies across the North American continent and that generators may take different actions to meet the performance requirements of the standard. Like prior versions of the EOP-012 standard, the proposed Reliability Standard accommodates regional differences in the temperature that constitutes "extreme cold," and it provides flexibility to entities on the measures they may take to ensure capability to operate at that temperature.

Consistent with the Commission's directives in the June 2024 Order, proposed Reliability Standard EOP-012-3 would further define the circumstances under which a Generator Owner may

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[9] *See* Order No. 672, *supra* note 1, at P 327 ("There should be a clear criterion or measure of whether an entity is in compliance with a proposed Reliability Standard. It should contain or be accompanied by an objective measure of compliance so that it can be enforced and so that enforcement can be applied in a consistent and non-preferential manner.").

[10] *See* Order No. 672, *supra* note 1, at P 328 ("The proposed Reliability Standard does not necessarily have to reflect the optimal method, or 'best practice,' for achieving its reliability goal without regard to implementation cost or historical regional infrastructure design. It should however achieve its reliability goal effectively and efficiently.").

declare that constraints preclude them from implementing one or more corrective actions to address freezing issues and would improve and clarify requirements for implementing corrective actions in a Corrective Action Plan so known reliability risks are addressed more quickly. These clarifications and improvements contribute to a clearer and stronger standard for generator cold weather preparedness that would help advance the reliability of the Bulk-Power System during future cold weather seasons.

6. Proposed Reliability Standards cannot be "lowest common denominator," i.e., cannot reflect a compromise that does not adequately protect Bulk-Power System reliability. Proposed Reliability Standards can consider costs to implement for smaller entities, but not at consequences of less than excellence in operating system reliability.[11]

The proposed Reliability Standard does not reflect a "lowest common denominator" approach. As with currently effective Reliability Standard EOP-012-2, the proposed Reliability Standard would require all owners or operators of BES generating units to identify cold weather data, calculate an Extreme Cold Weather Temperature for their generating unit(s), and develop and provide training annually on a comprehensive cold weather preparedness plan for the unit(s). For BES generating units that operate in freezing conditions, proposed Reliability Standard EOP-012-3 would carry forward requirements to help ensure that the generating unit has the appropriate freeze protection measures to operate reliably at the Extreme Cold Weather Temperature. Prior versions of the EOP-012 standard recognized that, in limited instances, freeze protection measures

[11] *See* Order No. 672, *supra* note 1, at P 329 ("The proposed Reliability Standard must not simply reflect a compromise in the ERO's Reliability Standard development process based on the least effective North American practice—the so-called 'lowest common denominator'—if such practice does not adequately protect Bulk-Power System reliability. Although the Commission will give due weight to the technical expertise of the ERO, we will not hesitate to remand a proposed Reliability Standard if we are convinced it is not adequate to protect reliability.").

See Order No. 672, *supra* note 1, at P 330 ("A proposed Reliability Standard may take into account the size of the entity that must comply with the Reliability Standard and the cost to those entities of implementing the proposed Reliability Standard. However, the ERO should not propose a 'lowest common denominator' Reliability Standard that would achieve less than excellence in operating system reliability solely to protect against reasonable expenses for supporting this vital national infrastructure. For example, a small owner or operator of the Bulk-Power System must bear the cost of complying with each Reliability Standard that applies to it.").

to provide full capability may not be able to be implemented at all or except at a prohibitive cost; in such cases, Generator Owners may consider whether a Generator Cold Weather Constraint would apply. In the interest of advancing operating system reliability, the criteria for what constitutes a Generator Cold Weather Constraint is limited, and Generator Owners declaring such a constraint must account for their limitations in the generating unit cold weather data provided to reliability entities and review these constraints periodically for continued applicability.

Consistent with the June 2024 Order, proposed Reliability Standard EOP-012-3 would improve upon prior versions of the standard by further defining the Generator Cold Weather Constraint criteria, providing for proactive ERO Enterprise oversight over constraint declarations, and requiring entities to perform more frequent reviews of their declared constraints to ensure they remain valid. The periodicity for these more frequent reviews strikes an appropriate balance between concerns about the administrative burden posed by more frequent reviews with the need to consider changed circumstances, including advancements in freeze protection technologies, that may eliminate the need for the constraint. The proposed standard also clarifies and improves upon Corrective Action Plan implementation deadlines, to help ensure that known reliability issues are addressed more quickly.

7. Proposed Reliability Standards must be designed to apply throughout North America to the maximum extent achievable with a single Reliability Standard while not favoring one geographic area or regional model. It should take into account regional variations in the organization and corporate structures of transmission owners and operators, variations in generation fuel type and ownership patterns, and regional variations in market design if these affect the proposed Reliability Standard.[12]

The proposed Reliability Standard would apply consistently throughout North America and does not favor one geographic area or regional model. The proposed Reliability Standard would

[12] *See* Order No. 672, *supra* note 1, at P 331 ("A proposed Reliability Standard should be designed to apply throughout the interconnected North American Bulk-Power System, to the maximum extent this is achievable with a

provide sufficient flexibility to accommodate regional/geographic variations, including climate, generation type, market issues, state rules, and other considerations.

8. Proposed Reliability Standards should cause no undue negative effect on competition or restriction of the grid beyond any restriction necessary for reliability.[13]

The proposed Reliability Standard would have no undue negative effect on competition and would not unreasonably restrict the available transmission capacity or limit the use of the BPS in a preferential manner. The proposed standard would require the same performance by each of the applicable entities. While the Generator Cold Weather Constraint criteria identify some circumstances that would apply only to specific generation types (i.e. specific freeze protection measures on specific types of generation), all types of generation are accounted for in the proposed standard.

9. The implementation time for the proposed Reliability Standard is reasonable.[14]

The proposed effective date for the proposed Reliability Standard is just and reasonable and appropriately balances the urgency in the need to implement the standard against the reasonableness of the time allowed for those who must comply to develop necessary procedures or other relevant capability. Under the proposed implementation plan for Reliability Standard

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single Reliability Standard. The proposed Reliability Standard should not be based on a single geographic or regional model but should take into account geographic variations in grid characteristics, terrain, weather, and other such factors; it should also take into account regional variations in the organizational and corporate structures of transmission owners and operators, variations in generation fuel type and ownership patterns, and regional variations in market design if these affect the proposed Reliability Standard.").

[13] *See* Order No. 672, *supra* note 1, at P 332 ("As directed by section 215 of the FPA, the Commission itself will give special attention to the effect of a proposed Reliability Standard on competition. The ERO should attempt to develop a proposed Reliability Standard that has no undue negative effect on competition. Among other possible considerations, a proposed Reliability Standard should not unreasonably restrict available transmission capability on the Bulk-Power System beyond any restriction necessary for reliability and should not limit use of the Bulk-Power System in an unduly preferential manner. It should not create an undue advantage for one competitor over another.").

[14] *See* Order No. 672, *supra* note 1, at P 333 ("In considering whether a proposed Reliability Standard is just and reasonable, the Commission will consider also the timetable for implementation of the new requirements, including how the proposal balances any urgency in the need to implement it against the reasonableness of the time allowed for those who must comply to develop the necessary procedures, software, facilities, staffing or other relevant capability.").

EOP-012-3, Reliability Standard EOP-012-3 and the revised definition of Generator Cold Weather Constraint would become effective on the later of: (1) October 1, 2025; or (2) the first day of the first calendar quarter that is three (3) months following regulatory approval. The October 1, 2025 date was chosen because, in the United States, the last compliance date for Reliability Standard EOP-012-2 is October 1, 2025 (Requirement R3). This relatively short implementation timeframe reflects NERC's determination that the practical impact of implementing the proposed changes is not expected to be significant. Entities, however, would have sufficient notice of their revised obligations. As multiple versions of the EOP-012 standard have been developed over the last several years, additional implementation information is provided to ensure an orderly transition to proposed Reliability Standard EOP-012-3. As discussed more fully in Section VI of the main filing, NERC has identified a potential concern regarding the implementation of revised Requirement R2 for a subset of new BES generating units entering commercial operation on or soon after October 1, 2027. To address this concern, NERC proposes to allow these entities additional time to comply with Requirement R2. The proposed implementation plan is attached as **Exhibit B** to this petition.

10. The Reliability Standard was developed in an open and fair manner and in accordance with the Commission-approved Reliability Standard development process.[15]

The proposed Reliability Standard was developed in accordance with NERC's Commission-approved processes for developing and approving Reliability Standards. **Exhibit H**

[15] *See* Order No. 672, *supra* note 1, at P 334 ("Further, in considering whether a proposed Reliability Standard meets the legal standard of review, we will entertain comments about whether the ERO implemented its Commission-approved Reliability Standard development process for the development of the particular proposed Reliability Standard in a proper manner, especially whether the process was open and fair. However, we caution that we will not be sympathetic to arguments by interested parties that choose, for whatever reason, not to participate in the ERO's Reliability Standard development process if it is conducted in good faith in accordance with the procedures approved by the Commission.").

includes a summary of the Reliability Standard development proceedings, and details the processes followed to develop the proposed Reliability Standard. These processes included, among other things, comment periods, pre-ballot review periods, and balloting periods. Additionally, all meetings of the standard drafting team were properly noticed and open to the public.

Following the initiation of Section 321.5 of the NERC Rules of Procedure by the NERC Board of Trustees, NERC posted a revised draft EOP-012-3 standard for a 45-day public comment period. The draft was revised considering the comments received. The proposed Reliability Standard was approved by the Board of Trustees on April 4, 2025. In approving the standard, the Board of Trustees considered the factors identified in Section 321.5 of the NERC Rules of Procedure, the Order No. 672 criteria, the June 2024 Order directives, the record of development including the comments received during the final posting, the consideration of those comments, and the recommendations of NERC management.

11. NERC must explain any balancing of vital public interests in the development of proposed Reliability Standards.[16]

NERC has identified no competing public interests regarding the request for approval of the proposed Reliability Standard.

12. Proposed Reliability Standards must consider any other appropriate factors.[17]

No other negative factors relevant to whether the proposed Reliability Standard is just and reasonable were identified.

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[16] *See* Order No. 672, *supra* note 1, at P 335 ("Finally, we understand that at times development of a proposed Reliability Standard may require that a particular reliability goal must be balanced against other vital public interests, such as environmental, social and other goals. We expect the ERO to explain any such balancing in its application for approval of a proposed Reliability Standard.").

[17] *See* Order No. 672, *supra* note 1, at P 323 ("In considering whether a proposed Reliability Standard is just and reasonable, we will consider the following general factors, as well as other factors that are appropriate for the particular Reliability Standard proposed.").

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Exhibit G
Analysis of Violation Risk Factors and Violation Severity Levels

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Violation Risk Factor and Violation Severity Level Justifications

Project 2024-03 Revisions to EOP-012-2

This document provides the drafting team's (DT's) justification for assignment of violation risk factors (VRFs) and violation severity levels (VSLs) for each requirement in EOP-012-3. Each requirement is assigned a VRF and a VSL. These elements support the determination of an initial value range for the Base Penalty Amount regarding violations of requirements in FERC-approved Reliability Standards, as defined in the Electric Reliability Organizations (ERO) Sanction Guidelines. The DT applied the following NERC criteria and FERC Guidelines when developing the VRFs and VSLs for the requirements.

NERC Criteria for Violation Risk Factors

High Risk Requirement

A requirement that, if violated, could directly cause or contribute to Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

Medium Risk Requirement

A requirement that, if violated, could directly affect the electrical state or the capability of the Bulk Electric System, or the ability to effectively monitor and control the Bulk Electric System. However, violation of a medium risk requirement is unlikely to lead to Bulk Electric System instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor, control, or restore the Bulk Electric System. However, violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to Bulk Electric System instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

Lower Risk Requirement
A requirement that is administrative in nature and a requirement that, if violated, would not be expected to adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor and control the Bulk Electric System; or, a requirement that is administrative in nature and a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor, control, or restore the Bulk Electric System.

FERC Guidelines for Violation Risk Factors

Guideline (1) – Consistency with the Conclusions of the Final Blackout Report

FERC seeks to ensure that VRFs assigned to Requirements of Reliability Standards in these identified areas appropriately reflect their historical critical impact on the reliability of the Bulk-Power System (BPS). In the VSL Order, FERC listed critical areas (from the Final Blackout Report) where violations could severely affect the reliability of the BPS:

- Emergency operations
- Vegetation management
- Operator personnel training
- Protection systems and their coordination
- Operating tools and backup facilities
- Reactive power and voltage control
- System modeling and data exchange
- Communication protocol and facilities
- Requirements to determine equipment ratings
- Synchronized data recorders
- Clearer criteria for operationally critical facilities
- Appropriate use of transmission loading relief.

Guideline (2) – Consistency within a Reliability Standard
FERC expects a rational connection between the sub-Requirement VRF assignments and the main Requirement VRF assignment.

Guideline (3) – Consistency among Reliability Standards
FERC expects the assignment of VRFs corresponding to Requirements that address similar reliability goals in different Reliability Standards would be treated comparably.

Guideline (4) – Consistency with NERC's Definition of the Violation Risk Factor Level
Guideline (4) was developed to evaluate whether the assignment of a particular VRF level conforms to NERC's definition of that risk level.

Guideline (5) – Treatment of Requirements that Co-mingle More Than One Obligation
Where a single Requirement co-mingles a higher risk reliability objective and a lesser risk reliability objective, the VRF assignment for such Requirements must not be watered down to reflect the lower risk level associated with the less important objective of the Reliability Standard.

NERC Criteria for Violation Severity Levels

VSLs define the degree to which compliance with a requirement was not achieved. Each requirement must have at least one VSL. While it is preferable to have four VSLs for each requirement, some requirements do not have multiple "degrees" of noncompliant performance and may have only one, two, or three VSLs.

VSLs should be based on NERC's overarching criteria shown in the table below:

Lower VSL	Moderate VSL	High VSL	Severe VSL
The performance or product measured almost meets the full intent of the requirement.	The performance or product measured meets the majority of the intent of the requirement.	The performance or product measured does not meet the majority of the intent of the requirement, but does meet some of the intent.	The performance or product measured does not substantively meet the intent of the requirement.

FERC Order of Violation Severity Levels

The FERC VSL guidelines are presented below, followed by an analysis of whether the VSLs proposed for each requirement in the standard meet the FERC Guidelines for assessing VSLs:

Guideline (1) – Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance

Compare the VSLs to any prior levels of non-compliance and avoid significant changes that may encourage a lower level of compliance than was required when levels of non-compliance were used.

Guideline (2) – Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties

A violation of a "binary" type requirement must be a "Severe" VSL.
Do not use ambiguous terms such as "minor" and "significant" to describe noncompliant performance.

Guideline (3) – Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement

VSLs should not expand on what is required in the requirement.

Guideline (4) – Violation Severity Level Assignment Should Be Based on a Single Violation, Not on a Cumulative Number of Violations

Unless otherwise stated in the requirement, each instance of non-compliance with a requirement is a separate violation. Section 4 of the Sanction Guidelines states that assessing penalties on a per violation per day basis is the "default" for penalty calculations.

VRF Justification for EOP-012-3, Requirement R1

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R1			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.

VSL Justifications for EOP-012-3, Requirement R1	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	There is a clarifying word change from “and” to “or” in all the VSL levels which did not have the unintended consequence of lowering the current level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R2

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R2			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not declare a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not declare a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units. units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not declare a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not declare a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.

VSL Justifications for EOP-012-3, Requirement R2	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	This requirement was modified to capture the difference for generating units for which the Generator Owner first contractually committed to design criteria relevant to this Requirement on or before/after June 29, 2023. The VSL was modified to add Generator Cold Weather Constraint and did not have the unintended consequence of lowering the current level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R3

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSL Justification for EOP-012-3, Requirement R3

The Drafting Team made non-substantial changes to this Requirement. The VSL did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VRF Justification for EOP-012-3, Requirement R4

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R4			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner implemented a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable parts within Requirement R4.	The Generator Owner maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.

VSL Justifications for EOP-012-3, Requirement R4	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The clarifying change in the High VSL to remove “had and” to align with the requirement language which did not have the unintended consequence of lowering the current level of compliance. There are no changes to other levels of the VSLs.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R5

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R5			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as described in Requirement R5 to the greater of: • one applicable personnel for a single generating unit; or • 5% or less of its total applicable personnel.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as described in Requirement R5 to the greater of: • two applicable personnel for a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as described in Requirement R5 to the greater of: • three applicable personnel for a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as described in Requirement R5 to the greater of: • four or more applicable personnel for a single generating unit; or • more than 15% of its total applicable personnel.

VSL Justifications for EOP-012-3, Requirement R5	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	There is a word change from “at” to “for” in reference to personnel supporting generating units in all the VSL which did not have the unintended consequence of lowering the current level of compliance. This edit clarifies that individuals needing unit-specific training may support many plant locations and not be specifically assigned at one plant. There are no changes to other levels of the VSLs.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R6

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R6			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 12 but fewer than 15 calendar months after the Generator Cold Weather Reliability Event.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 15 but fewer than 18 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirement R6, but it failed to contain one of the elements in Requirement R6, Part 6.3.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 18 but fewer than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirements R6, but it failed to contain two of the elements in Requirement R6, Part 6.3. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable), but it did not include one of the required elements.	The Generator Owner failed to develop a Corrective Action Plan where required under Requirement R6. OR The Generator Owner developed a Corrective Action Plan where required under Requirement R6, but failed to implement it. OR The Generator Owner failed to conduct a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, or the Generator Owner conducted the review, but it was conducted more than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan, but failed to contain

			three or more of the elements in Requirement R6, Part 6.3. OR The Generator Owner exceeded the timetables specified for completion in Requirement R6, Part 6.3.5, but did not submit a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable). OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.4 (if applicable), but it did not include two or more of the elements in Requirement R6, Part 6.4.

VSL Justifications for EOP-012-3, Requirement R6	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	This requirement was modified to ensure that there is a process in place when developing and implementing Corrective Action Plans as well timelines on when Corrective Action Plans should be complete. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R7

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R7			
Lower	**Moderate**	**High**	**Severe**
N/A	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include a description of updates to the cold weather preparedness plan and identification of operating limits as required in Requirement R7, Parts 7.1.3 and 7.1.4.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include one of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include one of the required elements.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include two or more of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include two or more of the required elements. OR The Generator Owner failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable). OR The Generator Owner failed to implement corrective action(s)

			identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) in accordance with Requirement R7 Part 7.3. OR The Generator Owner failed to complete corrective action(s) described in the Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) that preclude the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.

VSL Justifications for EOP-012-3, Requirement R7	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	This requirement was modified to ensure that each Generator Owner shall have dated evidence that demonstrates it implemented each Corrective Action Plan, including updating actions or timetables, or has explained in a declaration why corrective actions are not being implemented in accordance with Requirement R7. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R8

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R8			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner declared a Generator Cold Weather Constraint and submitted it to the Compliance Enforcement Authority but it did not do so within the timeframe provided in Requirement R8 Part 8.1.	The Generator Owner declared a Generator Cold Weather Constraint, but failed to update its operating limitations as required under Requirement R8, Part 8.2 (if applicable).	The Generator Owner declared a Cold Weather Constraint, but failed to update its Corrective Action Plan following a determination by the Compliance Enforcement Authority that the constraint is invalid in accordance with Requirement R8 Part 8.3 (as applicable). OR The Generator Owner failed to document and provide the required notice to the CEA under Requirement R8 Part 8.4 (if applicable).	The Generator Owner declared a Generator Cold Weather Constraint but failed to submit it to the Compliance Enforcement Authority. OR The Generator Owner failed to implement freeze protection measures to provide the necessary capability in accordance with Requirement R8 Part 8.3.

VSL Justifications for EOP-012-3, Requirement R8	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The Drafting Team added Lower VSL and Moderate VSL to enforce that the Generator Owner should submit a Generator Cold Weather Constraint in accordance with Requirement R8, Part 8.1 within the specified timeframe and must comply with Requirement R8, Parts 8.2 through 8.3. An additional level in the high VSL was added to cover new language in Requirement R8 Part 8.4 that was added to the standard covering the scenario that would allow a Generator Owner to document a new Generator Cold Weather Constraint that under an existing Generator Cold Weather Constraint that was previously validated and provide notice to the Compliance Enforcement Authority. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R9

VRF Justifications for EOP-012-3, Requirement R9	
Proposed VRF	**Lower**
NERC VRF Discussion	A VRF of Lower is appropriate due to the fact that reviewing each Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority at least once every 36 calendar months is administrative in nature. Failure to review the declaration in the timeframe would not under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor, control, or restore the bulk electric system. Therefore, it is consistent with the definition of a Lower VRF.
FERC VRF G1 Discussion Guideline 1- Consistency with Blackout Report	This VRF is consistent with the identified areas from the FERC list of critical areas in the Final Blackout Report.
FERC VRF G2 Discussion Guideline 2- Consistency within a Reliability Standard	This requirement has only a main VRF and no different sub-requirement VRFs.
FERC VRF G3 Discussion Guideline 3- Consistency among Reliability Standards	This VRF is consistent with other VRFs that address similar reliability goals in different Reliability Standards.
FERC VRF G4 Discussion Guideline 4- Consistency with NERC Definitions of VRFs	This VRF is consistent with the definition of a lower VRF requirement per the criteria filed with FERC as part of the ERO's Sanctions Guidelines.
FERC VRF G5 Discussion Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation	This requirement does not mingle a higher risk reliability objective and a lesser risk reliability objective. Therefore, the VRF reflects the risk of the whole requirement.

VSLs for EOP-012-3, Requirement R9			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 36 but fewer than 38 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 38 but fewer than 40 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 40 but fewer than 42 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was performed more than 42 calendar months after CEA validation or after the previous Generator Owner review. OR The Generator Owner failed to review a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9. OR The Generator Owner failed to develop or update a Corrective Action Plan where required by Requirement R9, Part 9.1 (if applicable).

VSL Justifications for EOP-012-3, Requirement R9	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The Drafting Team drafted Requirement R9 to enforce that the Generator Owner review a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid at least once every 36 months. If the constraint is no longer valid, Requirement R9, Part 9.1 requires the Generator Owner to develop or update a Corrective Action Plan pursuant to Requirement R7 within six (6) calendar months. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Exhibit H
Summary of Development and Complete Record of Development

Summary of Development History

The following is a summary of the development record for proposed Reliability Standard EOP-012-3.

I. Overview of the Standard Drafting Team

When evaluating a proposed Reliability Standard, the Commission is expected to give "due weight" to the technical expertise of the ERO.[1] The first two drafts of proposed Reliability Standard EOP-012-3 were developed by the standard drafting team ("SDT") selected to lead this project in accordance with Section 4.3 of the NERC Standard Processes Manual.[2] The SDT consisted of industry experts, all with a diverse set of experiences. A roster of the Project 2024-03 Revisions to EOP-012-2 SDT members is included in **Exhibit I**. Following the initiation of Section 321.5 of the NERC Rules of Procedure, the third and final drafts of proposed Reliability Standard EOP-012-3 were developed by volunteers from the NERC Standards Committee, working with NERC Staff. In developing these drafts, the group considered the Federal Energy Regulatory Commission ("FERC" or "Commission" directives), the recommendations of the Project 2024-03 SDT, and industry comments from prior postings and the Section 321.5 45-day public comment period.

II. Standard Development History

A. History of the EOP-012 Standard

NERC developed Reliability Standard EOP-012-1 to address reliability related findings from the 2021 FERC, NERC, and Regional Entity Joint Staff Report, *The February 2021 Cold*

[1] Section 215(d)(2) of the Federal Power Act; 16 U.S.C. § 824(d)(2).

[2] The NERC *Standard Processes Manual* is available at https://www.nerc.com/AboutNERC/Pages/Rules-of-Procedure.aspx.

Weather Outages in Texas and the South Central United States.[3] On February 16, 2023, FERC issued an order approving Reliability Standards EOP-011-3 and EOP-012-1 and directing modification of Reliability Standard EOP-012-1. In response, NERC developed Reliability Standard EOP-012-2 and submitted it for Commission approval in February 2024. On June 27, 2024, FERC issued an order approving Reliability Standard EOP-012-2 and directing further modifications.

B. Standard Authorization Request Development

On July 17, 2024, the Standards Committee accepted the Project 2024-03 Revisions to EOP-012-2 Standards Authorization Request ("SAR"), authorized an informal comment period of at least 15 days from July 18, 2024 through August 16, 2024 in accordance with the procedural waiver discussed in the following section, and authorized the solicitation of SDT members for a period of at least 15 days.[4] The Standards Committee authorized drafting revisions to the Reliability Standard as identified in the SAR on September 6, 2024.[5]

C. Standards Committee Authorizes Procedural Waiver

On July 17, 2024, the Standards Committee Executive Committee authorized a waiver of Sections 4.8, 4.9, 4.12 and 4.13 of the Standard Processes Manual to reduce the informal comment period the SAR from 30 days to as little as 15 days, reduce the initial formal comment and ballot periods from 45 days to as little as 20 days with additional formal comment and ballot periods

[3] FERC, NERC, Regional Entity Staff Report: *The February 2021 Cold Weather Outages in Texas and the South Central United States* (Nov. 2021), https://www.ferc.gov/media/february-2021-cold-weather-outages-texas-and-south-central-united-states-ferc-nerc-and [hereinafter February 2021 Event Joint Inquiry Report].

[4] NERC, *Standards Committee Meeting Minutes* (July 17, 2021), https://www.nerc.com/comm/SC/Agenda%20Highlights%20and%20Minutes/Meeting_Minutes-July_2024.pdf.

[5] NERC, *Standards Committee Executive Committee Agenda Package September 6, 2024*, https://www.nerc.com/comm/SC/Agenda%20Highlights%20and%20Minutes/SCEC_Call_September_6_2024.pdf.

reduced from 30 days to as little as 15 days, and final ballot periods reduced from 10 days to as little as 5 days.

D. First Posting - Comment Period, Initial Ballot, and Non-binding Poll

On October 16, 2024, the Standards Committee authorized the initial posting of proposed Reliability Standard EOP-012-3 and the associated Implementation Plan and other associated documents for a 20-day formal comment period.[6] The initial posting took place from October 17, 2024 through November 5, 2024, with a parallel initial ballot and non-binding poll on the Violation Risk Factors ("VRFs") and Violation Severity Levels ("VSLs") held during the last 5 days of the comment period from October 31, 2024 through November 5, 2024.[7] The initial ballot for proposed Reliability Standard EOP-012-3 received 42.29 percent approval, reaching quorum at 90.98 percent of the ballot pool, and the initial ballot for the associated Implementation Plan received 45.86 percent approval with 91.25 percent quorum.[8] The non-binding poll for the associated VRFs and VSLs received 40.83 percent supportive opinions, reaching quorum at 91.56 percent of the ballot pool.[9] There were 60 sets of responses, including comments from approximately 165 different individuals and approximately 109 companies, representing all 10 industry segments.[10]

E. Second Posting - Comment Period, Additional Ballot, and Non-binding Poll

The second draft of proposed Reliability Standard EOP-012-3, the associated Implementation Plan, and other associated documents were posted for an 18-day formal comment period from December 3, 2024 through December 20, 2024, with a parallel additional ballot and

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6 NERC, *Standards Committee Agenda Package October 16, 2024*, https://www.nerc.com/comm/SC/Agenda%20Highlights%20and%20Minutes/SC_Meeting_Agenda_Package-October_16_2024.pdf.

7 *See* Exhibit H, Complete Record of Development at item 18.

8 *Id.* at items 23, 24.

9 *Id.* at item 25.

10 *Id.* at item 19.

non-binding poll held from December 16, 2024 through December 20, 2024.[11] The additional ballot for proposed Reliability Standard EOP-012-3 received 44.54 percent approval, reaching quorum at 88.93 percent of the ballot pool, and the additional ballot for the associated Implementation Plan received 59.7 percent approval with 89.58 percent quorum.[12] The non-binding poll for the associated VRFs and VSLs received 48.1 percent supportive opinions, reaching quorum at 88 percent of the ballot pool.[13] There were 66 sets of responses, including comments from approximately 171 different individuals and approximately 109 companies, representing all 10 industry segments.[14]

F. Proceedings under Section 321 of NERC Rules of Procedure

Following the failure of the ballot body to approve two successive drafts of revised Reliability Standard EOP-012-2, the NERC Board of Trustees took action at its January 10, 2025 meeting to invoke its special authority under Section 321 of the NERC Rules of Procedure.[15] Finding that the ballot body for draft Reliability Standard EOP-012-3 has not approved a proposed Reliability Standard that contains provisions to adequately address specific matters identified in directives issued by the Commission in its June 27, 2024 Order, the Board directed the following in accordance with NERC Rules of Procedure Section 321.5:

- Standards Committee, to work with NERC staff and stakeholders to prepare a draft Reliability Standard responsive to the directives in FERC's June 27, 2024 Order to

[11] *Id.* at item 39.

[12] *Id.* at items 44, 45.

[13] *Id.* at item 46.

[14] *Id.* at item 40.

[15] NERC, *Board of Trustees Meeting Minutes* (Jan. 10, 2025), https://www.nerc.com/gov/bot/Agenda%20highlights%20and%20Mintues%202013/Minutes%20-%20Board%20of%20Trustees%20Open%20Meeting%20-January%2010%202025.pdf.

be posted for a 45-day public comment period in accordance with section 321.5.1 of the NERC Rules of Procedure, by no later than January 29, 2025;

- NERC Management present the draft Reliability Standard to the Board for its consideration, along with the entire record of development and any comments received, by no later than the open meeting to be convened for this purpose.

G. Third Posting – Comment Period

As directed by the NERC Board of Trustees, the third draft of proposed Reliability Standard EOP-012-3 was posted for a 45-day comment period from January 27, 2025 through March 12, 2025. There was no ballot associated with this comment period.[16] There were 43 sets of responses, including comments from approximately 108 different individuals and approximately 77 companies, representing 7 industry segments.[17]

H. Final Posting

Following the comment period, volunteers from the Standards Committee and NERC staff worked to develop recommendations for additional standards modifications considering the comments received during the 45-day public comment period. The final draft of proposed Reliability Standard EOP-012-3 and the supporting materials were posted to the NERC website on March 25, 2025. [18]

I. Board of Trustees Approval

On April 4, 2025, the NERC Board of Trustees approved proposed Reliability Standard EOP-012-3 as just, reasonable, not unduly discriminatory or preferential, and in the public interest in accordance with Section 321.5 of the NERC Rules of Procedure.[19] In making this determination,

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[16] Exhibit H, Complete Record of Development at item 59.

[17] *Id.* at item 61.

[18] NERC, *Board of Trustees Agenda Package April 4, 2025*, https://www.nerc.com/gov/bot/Agenda%20highlights%20and%20Mintues%202013/Board%20of%20Trustees%20Open%20Meeting%20Agenda%20Package%20April%204%202025%20Attendees.pdf.

[19] *Id.*

the Board considered the developmental record for the draft EOP-012-3 standard, including the comments received during the final posting, and the recommendations for further modifications following that posting in light of the comments received. The Board of Trustees also considered that the proposed Reliability Standard EOP-012-3 is practical, technically sound, technically feasible, cost justified, and serves the best interests of the reliability of the Bulk-Power System.

Complete Record of Development

Project 2024-03 Revisions to EOP-012-2

Related Files

Status

In June 2024, the Federal Energy Regulatory Commission (FERC) approved Reliability Standard EOP-012-2 and directed NERC to submit a revised version to address and clarify several aspects within nine months of the date of the order.

In consideration of FERC's deadline and the importance of this standard, the Board invoked its authority under Section 321.5 of NERC's Rules of Procedure. Under this authority, the Board directed the Standards Committee, with the assistance of stakeholders and NERC staff, to prepare a responsive standard, which was then posted for a 45-day public comment period. This comment period concluded March 12, 2025.

Based on comments received, revisions have been made to the standard. The final documents that will be presented to the NERC Board of Trustees are posted below.

The NERC Board of Trustees will convene a special meeting on April 4, 2025 to review the standard and the complete record of developing, including the comments submitted during the public comment period, to determine next steps.

Background

NERC developed the original version of the generator cold weather preparedness Reliability Standard, Reliability Standard EOP-012-1, in 2022 under Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination. The purpose of this project was to address standards-related recommendations from the Federal Energy Regulatory Commission (FERC)/NERC/Regional Entity staff review of operations during the February 2021 Winter Storm Uri event.

NERC developed Reliability Standard EOP-012-2 in 2023-2024 to address Commission directives from the February 2023 order approving Reliability Standards EOP-012-1 and EOP-011-3. In the February 2023 Order, the Commission directed that NERC revise EOP-012-1 to clarify the applicability of the standard's requirements for generator cold weather preparedness, further define the circumstances under which a Generator Owner may declare that constraints preclude them from implementing one or more corrective actions to address freezing issues, and to shorten the implementation timeline so cold weather reliability risks would be addressed more quickly.

On June 27, 2024, FERC issued an order approving Reliability Standard EOP-012-2. While finding Reliability Standard EOP-012-2 represented an improvement over the prior version and addressed many of its concerns, FERC found the standard requires further improvement to address certain concerns remaining from its February 2023 order. FERC therefore directed NERC to revise the standard in five areas and to submit a revised standard within nine (9) months of the date of the order, or by March 27, 2025.

Standard Affected: EOP-012-2

Purpose/Industry Need

The purpose of this project is to address the directives identified by FERC in its June 27, 2024 order approving Reliability Standard EOP-012-2 and directing further modifications. *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61,204 (2024), available here. In that order, FERC found that further improvements needed to be made to address ambiguous language and address other reliability gaps/implementation issues in the standard and related definitions to fully address issues first raised in the Commission's February 2023 Order approving EOP-012-1. FERC directed that NERC submit the modifications within 9 months of the date of the order, or by March 27, 2025.

Proposed Project Timeline

The project timeline is listed below for industry awareness. This table will be updated with any changes as the project progresses.

Process Steps	Dates	Notes
Drafting Team members seated	08/21/2024	Standards Committee (SC) August meeting
Standards Committee Executive Committee (SCEC) authorize revisions	09/05/2024	SCEC Special Call
SC approval of initial ballot	10/16/2024	SC October Meeting
Initial Ballot	10/17/24–11/05/24	20-day initial ballot and comment period per waiver approved at July SC meeting
First Additional Ballot	12/3/24–12/20/24	18-day additional ballot and comment period per waiver
321 Action Considered	01/02/25–01/08/25	Based on additional ballot results, NERC staff will consider the comments received and if 321 action should be proposed to the NERC Board to meet the FERC deadline.
Board Special Call	01/10/25	The NERC Board decided to take action as detailed in Section 321.5 of the NERC Rules of Procedure
Special 321 Team	01/13/25–01/21/25	Review and finalize redlined Standard and associated documents.
SC Meeting	01/22/2025	NERC staff will provide updates to the SC
Quality Review	01/23/25 - 01/24/25	Quality Review process
Posting Date	01/27/25 - 03/12/25	45 day posting for industry comments (no ballot)
Board Action	03/20/2025	Board special call on submitting Standard for adoption
FERC Order DUE Date	03/27/25	

Draft	Actions	Dates	Results	Consideration of Comments
ROP 321 **Documents Presented for NERC Board Approval** **EOP-012-3** **(63)** Clean | **(64)** Redline to Last Posted | **(65)** Redline to Last Approved **Implementation Plan** **(66)** Clean | **(67)** Redline **Supporting Materials** Technical Rationale **(68)** Clean | **(69)** Redline **(70)** VRF/VSL Justifications **(71)** Consideration of Directives Generator Cold Weather CAP Extension and Constraint Process **(72)** Clean | **(73)** Redline **(74)** Calculating Extreme Cold Weather Temperature (No changes from last posting)	**(75)** Info *There is no ballot associated with this posting.	Posted on 03/25/25		

(ROP 321 Posting) **Draft 3** **EOP-012-3** *Updated with Compliance Abeyance Language **(47)** *Clean| **(48)** *Redline to Last Posted| **(49)** *Redline to Last Approved **Implementation Plan** **(50)** Clean | **(51)** Redline **Supporting Materials** Technical Rationale *Updated with adding footnote 10 **(52)** *Clean | **(53)** *Redline **(54)** Unofficial Comment Form **(55)** VRF/VSL Justifications **(56)** Consideration of Directives **(57)** Generator Cold Weather CAP Extension and Constraint Process (No changes from last posting) **(58)** Calculating Extreme Cold Weather Temperature (No changes from last posting)	Comment Period* **(59)** Updated Info **(60)** Info Submit Comments *There is no ballot associated with this comment period.	01/27/25 – 03/12/25	**(61)** Comments Received	**(62)** Consideration of Comments
Draft 2 **EOP-012-3** **(26)** Clean **(27)** Redline to Last Posted | **(28)** Redline to Last Approved Implementation Plan **(29)** Clean | **(30)** Redline **Supporting Materials** Technical Rationale **(31)** Clean | **(32)** Redline **(33)** Unofficial Comment Form **(34)** VRF/VSL Justifications **(35)** Consideration of Directives Generator Cold Weather CAP Extension and Constraint Process **(36)** Clean | **(37)** Redline **(38)** Calculating Extreme Cold Weather Temperature	Additional Ballots **(42)** Ballot Open Reminder **(43)** Info Vote	12/16/24 - 12/20/24	Ballot Results **(44)** EOP-012-3 **(45)** Implementation Plan **(46)** Non-binding Poll Results	**(41)** Consideration of Comments
	Comment Period **(39)** Info Submit Comments	12/03/24 - 12/20/24	**(40)**Comments Received	
Draft 1 **EOP-012-3** **(9)** Clean | **(10)** Redline **(11)** Implementation Plan **Supporting Materials** **(12)** Technical Rationale **(13)** Unofficial Comment Form **(14)** VRF/VSL Justifications **(15)** Mapping Document **(16)** Generator Cold Weather CAP Extension and Constraint **(17)** ProcessCalculating Extreme Cold Weather Temperature	Initial Ballot **(21)** Ballot Open Reminder **(22)** Info Vote	10/31/24 - 11/05/24	Ballot Results **(23)** EOP-012-3 **(24)** Implementation Plan **(25)** Non-binding Poll Results	**(20)** Consideration of Comments
	Join Ballot Pools	10/17/24 - 10/28/24		
	Comment Period **(18)** Info Submit Comments	10/17/24 - 11/05/24	**(19)**Comments Received	
Standard Authorization Request **(7)** Clean | **(8)** Redline	Approved by Standards Committee Executive Committee (SCEC) on September 6, 2024.			
(6) Waiver	Standards Committee accepted the waiver on July 17, 2024.			
(3) Standard Authorization Request **Supporting Materials** **(4)** Unofficial Comment Form (Word)	Comment Period **(5)** Info Submit Comments	7/18/24 – 8/16/24	Comments Received	
Drafting Team Nominations **Supporting Materials** **(1)** Unofficial Nomination Form (Word)	Nomination Period **(2)** Info Submit Nominations	7/18/24 – 8/1/24		

Additional Materials – Board of Trustees Approval

(76) Board of Trustees Open Meeting Agenda Package April 4, 2025

(77) Board of Trustees Open Meeting Draft Minutes – April 4, 2025

Unofficial Nomination Form

Project 2024-03 Revisions to EOP-012-2

Do not use this form for submitting nominations. Use the electronic form to submit nominations for **Project 2024-03 Revisions to EOP-012-2** drafting team members by **8 p.m. Eastern, August 1, 2024.** This unofficial version is provided to assist nominees in compiling the information necessary to submit the electronic form.

Additional information about this project is available on the project page. If you have questions, contact Senior Standards Developer, Ben Wu (via email), or at 470-542-6882.

By submitting a nomination form, you are indicating your willingness and agreement to actively participate in face-to-face meetings and conference calls. Previous drafting or Standard review team experience is beneficial, but not required.

Project Information

Project Purpose

The purpose of this project is to address the directives identified by FERC in its June 27, 2024 order approving Reliability Standard EOP-012-2 and directing further modifications. *N. Am. Elec. Reliability Corp., 187* FERC ¶ 61,204 (2024), available here. In that order, FERC found that further improvements needed to be made to address ambiguous language and address other reliability gaps/implementation issues in the standard and related definitions to fully address issues first raised in the Commission's February 2023 Order approving EOP-012-1. FERC directed that NERC submit the modifications within 9 months of the date of the order, or by March 27, 2025.

Standards Affected

EOP-012-2

Nominee Expertise Requested

For this project, NERC is seeking individuals who possess experience with cold weather preparation, such as through performing or developing processes to address the following tasks:

- Performing inspection and identification of critical components on generating units that are susceptible to freezing and retrofitting generating units to operate at extreme temperatures;
- Conducting winter-specific and plant-specific operator awareness and preparedness training;
- Determining the causes of outages, failure to start or derates for generating units during cold weather conditions, and developing and implementing corrective action plans;
- Determining and communicating with the appropriate entities a generating unit's capacity during forecasted cold weather, including the accelerated cooling effect of wind;

- Developing or implementing Balancing Authority operating plans for contingency reserves and to mitigate capacity and energy emergencies;
- Developing or implementing load shed procedures of Transmission Operators, Transmission Owners, Distribution Providers and Balancing Authorities;
- Other tasks for the reliable planning and operation of the BPS during cold weather conditions.

Time Commitment Expectations

Time commitments for most projects include up to two face-to-face meetings per quarter (on average two full working days each meeting) with conference calls scheduled as needed. Team members can agree to individual or subgroup assignments, hold separate meetings, and present to the full drafting team for discussion and review. Another important component of quality reviews and drafting team efforts is outreach. Members of the team will be expected to conduct industry outreach during the development process to support a successful project outcome.

Project Priority

Each project will be developed according to that project's priority status. While each standard project addresses particular industry needs, some will be identified as a higher priority. A high priority project can include a strict timeline, which may be needed to effectively respond to a FERC Directive or other factors determined by the NERC Board of Trustees. A high priority project may also need to increase the frequency of meetings at any time throughout the development process to account for project timeline needs. Similarly, low priority projects may adjust to less frequent meetings to reallocate resources to high priority projects.

This project has been identified as high priority at this time.

Name:	
Organization:	
Address:	
Telephone:	
E-mail:	
Please briefly describe your experience and qualifications to serve on the requested Standard Drafting Team (Bio):	
If you are currently a member of any NERC drafting team, please list each team here:	

☐ Not currently on any active SAR or standard drafting team. ☐ Currently a member of the following SAR or standard drafting team(s):
If you previously worked on any NERC drafting team please identify the team(s): ☐ No prior NERC SAR or standard drafting team. ☐ Prior experience on the following team(s):
Acknowledgement that the nominee has read and understands both the *NERC Participant Conduct Policy* and the *Standard Drafting Team Scope* documents, available on NERC Standards Resources. ☐ Yes, the nominee has read and understands these documents.

Select each NERC Region in which you have experience relevant to the Project for which you are volunteering:		
☐ MRO ☐ NPCC ☐ RF	☐ SERC ☐ Texas RE ☐ WECC	☐ NA – Not Applicable

Select each Industry Segment that you represent:	
☐	1 — Transmission Owners
☐	2 — RTOs, ISOs
☐	3 — Load-serving Entities
☐	4 — Transmission-dependent Utilities
☐	5 — Electric Generators
☐	6 — Electricity Brokers, Aggregators, and Marketers
☐	7 — Large Electricity End Users
☐	8 — Small Electricity End Users
☐	9 — Federal, State, and Provincial Regulatory or other Government Entities
☐	10 — Regional Reliability Organizations and Regional Entities
☐	NA – Not Applicable
Select each Function in which you have current or prior expertise:	

☐ Balancing Authority ☐ Compliance Enforcement Authority ☐ Distribution Provider ☐ Generator Operator ☐ Generator Owner ☐ Interchange Authority ☐ Load-serving Entity ☐ Market Operator ☐ Planning Coordinator	☐ Transmission Operator ☐ Transmission Owner ☐ Transmission Planner ☐ Transmission Service Provider ☐ Purchasing-selling Entity ☐ Reliability Coordinator ☐ Reliability Assurer ☐ Resource Planner

Provide the names and contact information for two references who could attest to your technical qualifications and your ability to work well in a group:			
Name:		Telephone:	
Organization:		E-mail:	
Name:		Telephone:	
Organization:		E-mail:	

Provide the name and contact information of your immediate supervisor or a member of your management who can confirm your organization's willingness to support your active participation.			
Name:		Telephone:	
Title:		Email:	

Version History

Version	Date	Revision Details

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Standards Announcement

Project 2024-03 Revisions to EOP-012-2

Drafting Team Nomination Period Open through August 1, 2024

Now Available

Nominations are being sought for drafting team members through **8 p.m. Eastern, Thursday, August 1, 2024**.

Use the electronic form to submit a nomination. Contact Cindy Jackson regarding issues using the electronic form. An unofficial Word version of the nomination form is posted on the Standard Drafting Team Vacancies page and the project page.

By submitting a nomination form, you are indicating your willingness and agreement to actively participate in face-to-face meetings and conference calls.

The time commitment for this project is expected to be two face-to-face meetings per quarter (on average two full working days each meeting) with conference calls scheduled as needed to meet the agreed upon timeline the team sets forth. Team members may also have side projects, either individually or by sub-group, to present for discussion and review. Lastly, an important component of the drafting team effort is outreach. Members of the team will be expected to conduct industry outreach during the development process to support a successful ballot.

Previous drafting team experience is beneficial but not required. See the nomination form and project page for additional information.

Next Steps

The Standards Committee is expected to appoint members to the drafting team in August 2024. Nominees will be notified shortly after they have been appointed.

For more information on the Standards Development Process, refer to the Standard Processes Manual.

For more information or assistance, contact Senior Standards Developer, Ben Wu (via email) or at 470-542-6882. Subscribe to this project's observer mailing list by selecting "NERC Email Distribution Lists" from the "Service" drop-down menu and specify “Project 2024-03 Revisions to EOP-012-2” in the Title and Description Boxes.

North American Electric Reliability Corporation
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Suite 600, North Tower
Atlanta, GA 30326
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Standard Authorization Request (SAR)

Complete and submit this form, with attachment(s) to the NERC Help Desk. Upon entering the Captcha, please type in your contact information, and attach the SAR to your ticket. Once submitted, you will receive a confirmation number which you can use to track your request.

The North American Electric Reliability Corporation (NERC) welcomes suggestions to improve the reliability of the bulk power system through improved Reliability Standards.

Requested information			
SAR Title:	Revisions to EOP-012-2		
Date Submitted:	July 1, 2024		
SAR Requester			
Name:	Soo Jin Kim, Vice President of Engineering and Standards		
Organization:	NERC		
Telephone:		Email:	Soo.jin.kim@nerc.net
SAR Type (Check as many as apply)			
☐ New Standard ☒ Revision to Existing Standard ☒ Add, Modify or Retire a Glossary Term ☐ Withdraw/retire an Existing Standard		☐ Imminent Action/ Confidential Issue (SPM Section 10) ☐ Variance development or revision ☐ Other (Please specify)	
Justification for this proposed standard development project (Check all that apply to help NERC prioritize development)			
☒ Regulatory Initiation ☐ Emerging Risk (Reliability Issues Steering Committee) Identified ☐ Reliability Standard Development Plan		☐ NERC Standing Committee Identified ☐ Enhanced Periodic Review Initiated ☐ Industry Stakeholder Identified	
What is the risk to the Bulk Electric System (What Bulk Electric System (BES) reliability benefit does the proposed project provide?):			
Multiple winter storm events since 2011 have demonstrated the risk to the Bulk Power System when generators fail to prepare adequately for extreme cold weather conditions. The EOP-012 Reliability Standard provides a comprehensive framework of requirements for generator cold weather preparedness to ensure that more generators are available during extreme cold weather conditions and not forced offline due to foreseeable freezing issues. FERC, however, has identified several ambiguities and other reliability issues which could reduce the effectiveness of this standard. FERC directed NERC to revise EOP-012-2 and associated definitions to address these issues by March 2025.			
Purpose or Goal (What are the reliability gap(s) or risk(s) to the Bulk Electric System being addressed, and how does this proposed project provide the reliability-related benefit described above?):			
The purpose of this project is to address the directives identified by FERC in its June 27, 2024 order approving Reliability Standard EOP-012-2 and directing further modifications. *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61,204 (2024). In that order, FERC found that further improvements needed to be made to address ambiguous language and address other reliability gaps/implementation issues in the			

Requested information
standard and related definitions to fully address issues first raised in the Commission's February 2023 Order approving EOP-012-1. *See N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094, PP 3-11 (2023) (February 2023 Order); *reh'g denied*, 183 FERC ¶ 62,034, *order on reh'g*, 183 FERC ¶ 61,222 (2023). FERC directed that NERC submit the modifications within 9 months of the date of the order, or by March 27, 2025.
Project Scope (Define the parameters of the proposed project):
The scope of this project will be to revise the EOP-012-2 standard and its associated *Glossary* definitions to address the directives for further modifications identified by FERC in its June 2024 Order approving EOP-012-2. The drafting team will have flexibility to address the directives in the manner it deems best, which may include revising existing requirements and *Glossary* definitions or drafting new ones. Issues related to compliance monitoring approaches will be addressed by NERC Staff. Although it is not believed to be necessary to address the directives, to the extent a drafting team determines creating a new standard or revising another existing standard would provide the optimal approach for addressing one or more of these directives, the drafting team should have the flexibility to pursue that approach. The drafting team will be charged with addressing the standards modification directives from the June 2024 order, which include: *Directives to Revise the Definition of Generator Cold Weather Constraint and Clarify Requirements for Declared Constraints* P 47: Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit to the Commission for approval modifications to proposed Reliability Standard EOP-012-2 that address concerns related to the ambiguity of the newly defined Generator Cold Weather Constraint term and criteria. Specifically, we direct NERC to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them. One approach to satisfy this directive could be to incorporate into the proposed Reliability Standard a limited and discrete list of circumstances that would qualify as acceptable constraints. We note that NERC's technical rationale document, created by NERC's Standard Drafting Team and included in NERC's filing, includes a list of technical constraints that could serve as a starting point for a list of circumstances that would qualify as acceptable constraints. To the extent that NERC continues to believe that the extent of industry adoption for winterization technologies should be a criterion for declaring a constraint, NERC should clearly explain in its filing how it will assess the extent of such adoption in a way that provides for consistent compliance and enforcement outcomes. Alternatively, NERC could establish a pre-approval process for all Generator Cold Weather Constraint declarations. While a clearly defined list may be preferable, a pre-approval process could be established to ensure entities' declared Generator Cold Weather Constraints are appropriate and can be supported and defended. Further, as part of the directive to develop and submit modifications to the Generator Cold Weather Constraint definition of proposed Reliability Standard EOP-012-2, we direct NERC, pursuant to section 215(d)(5) of the FPA, to remove the

Requested information
references to "cost," "reasonable cost," "unreasonable cost," and "good business practices" and replace them with criteria that are objective, unambiguous, and auditable. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns. P 54: Accordingly, we again direct NERC, pursuant to section 215(d)(5) of the FPA, to modify proposed Reliability Standard so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner. We also direct NERC to include in its compliance filing, a plan to timely review such declarations to verify compliance with proposed Reliability Standard EOP-012-2 and its successors or obligations in a corrective action plan and take corrective action where necessary. For example, modifying Standard to require the generator owners to provide declarations (or changes to the declarations) to NERC within 45 days. It is up to NERC whether it would like to delegate this task to the relevant Regional Entities. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns. *Revisions to Corrective Action Plan Requirements* P 68: Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. Based on compliance with Requirements R2 and R3, those generating units should have already had appropriate freeze protection measures implemented to be capable of operating at the generating units' respective Extreme Cold Weather Temperature. Therefore, we find that a shorter timeframe to implement corrective actions that address existing or new equipment or freeze protection measures is appropriate. For example, to satisfy this directive, NERC could require generator owners to implement corrective actions prior to the next winter season for generating units that experience a Cold Weather Reliability Event and to complete freeze protection measures on similar equipment on all of its fleet within 24 months of becoming aware of the freeze issue. For corrective action plans that involve larger and more complicated implementations, NERC could incorporate a staggered 48-month corrective action plan implementation deadline. P 70: [W]e direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC… P 72: We…find that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to clarify that any

Requested information
Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date. P 76: We believe that proposed Reliability Standard EOP-012-2, Requirement R7's corrective action plan implementation deadlines have remaining ambiguities that need to be addressed. As noted above, the Commission has previously expressed similar concerns regarding the vagueness and enforceability of Reliability Standards language. Specifically, we agree with the concerns raised by the ISO/RTO Council that Requirement R7 of proposed Reliability Standard EOP-012-2 does not provide clear direction as to the required corrective action plan implementation timeline that applies to certain generator owners. For example, it is unclear how the corrective action plan implementation timeline would apply if a generator owner had combinations of both existing and new equipment for freeze protection measures. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to address these ambiguities by expanding on Requirement R7.1.1 and 7.1.2 to make it clear which corrective action plan implementation deadline applies to which generator owner. *Periodic Review of Generator Cold Weather Constraint Declarations* P 94: We agree with the ISO/RTO Council that the proposed five-year review period for the declared Generator Cold Weather Constraints in Requirement R8.1 could delay the identification and adoption of new freeze protection measures and does not represent the current pace of technological advancements. We acknowledge that a more frequent review does impose some additional administrative burden to the generator owner to review the technological advancements that hindered its ability to winterize; nonetheless, a lengthy period between a Generator Cold Weather Constraint declaration review by the generator owner offers little incentive to timely adopt new freeze protection technologies. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R8, Part 8.1 of proposed Reliability Standard EOP 012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations to verify that the declaration remains valid. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns.
Detailed Description (Describe the proposed deliverable(s) with sufficient detail for a drafting team to execute the project. If you propose a new or substantially revised Reliability Standard or definition, provide: (1) a technical justification[1] of developing a new or revised Reliability Standard or definition, which includes a discussion of the risk and impact to reliability-of the BES, and (2) a technical foundation document (*e.g.,* research paper) to guide development of the Standard or definition):

[1] The NERC Rules of Procedure require a technical justification for new or substantially revised Reliability Standards. Please attach pertinent information to this form before submittal to NERC.

Requested information
The drafting team should propose standards modifications responding to the above-listed FERC directives, either as directed by FERC or in an equally effective and efficient manner as supported by the standard drafting team. In addressing these directives, the drafting team should familiarize itself with June 2024 Order approving EOP-012-2 and the February 2023 Order approving EOP-012-1, which discuss the directives and the underlying rationale for those directives. The drafting team should also familiarize itself with the records of development for EOP-012-1 and EOP-012-2, as well as the *FERC/NERC/Regional Entity Staff Report: The February 2021 Cold Weather Outages in Texas and the South Central United States* (Nov. 2021) that prompted the development of the EOP-012 standard.
Cost Impact Assessment, if known (Provide a paragraph describing the potential cost impacts associated with the proposed project):
Cost impacts are unknown at this time.
Please describe any unique characteristics of the BES facilities that may be impacted by this proposed standard development project (*e.g.*, Dispersed Generation Resources):
BES generating facilities
To assist the NERC Standards Committee in appointing a drafting team with the appropriate members, please indicate to which Functional Entities the proposed standard(s) should apply (*e.g.*, Transmission Operator, Reliability Coordinator, etc. See the NERC Rules of Procedure Appendix 5A:
The Generator Owner and Generator Operator are the applicable entities; however, the standard drafting team should also include other Functional Entities that ensure the reliability of the Bulk-Power System during extreme cold weather conditions (e.g., Balancing Authority, Reliability Coordinator, Transmission Operator).
Do you know of any consensus building activities[2] in connection with this SAR? If so, please provide any recommendations or findings resulting from the consensus building activity.
None
Are there any related standards or SARs that should be assessed for impact as a result of this proposed project? If so, which standard(s) or project number(s)?
None
Are there alternatives (e.g., guidelines, white paper, alerts, etc.) that have been considered or could meet the objectives? If so, please list the alternatives with the benefits of using them.
FERC directed that NERC revise the EOP-012 standard; other alternatives would not meet the objectives of this project.

[2] Consensus building activities are occasionally conducted by NERC and/or project review teams. They typically are conducted to obtain industry inputs prior to proposing any standard development project to revise, or develop a standard or definition.

Reliability Principles	
Does this proposed standard development project support at least one of the following Reliability Principles (Reliability Principles)? Please check all those that apply.	
☒	1. Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
☒	2. The frequency and voltage of interconnected bulk power systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
☒	3. Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably.
☐	4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained and implemented.
☐	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk power systems.
☒	6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.
☐	7. The security of the interconnected bulk power systems shall be assessed, monitored and maintained on a wide area basis.
☐	8. Bulk power systems shall be protected from malicious physical or cyber attacks.

Market Interface Principles	
Does the proposed standard development project comply with all of the following Market Interface Principles?	Enter (yes/no)
1. A reliability standard shall not give any market participant an unfair competitive advantage.	Yes
2. A reliability standard shall neither mandate nor prohibit any specific market structure.	Yes
3. A reliability standard shall not preclude market solutions to achieving compliance with that standard.	YEs
4. A reliability standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards.	Yes

Identified Existing or Potential Regional or Interconnection Variances	
Region(s)/ Interconnection	Explanation
e.g., NPCC	

For Use by NERC Only

SAR Status Tracking (Check off as appropriate).	
☐ Draft SAR reviewed by NERC Staff ☐ Draft SAR presented to SC for acceptance ☐ DRAFT SAR approved for posting by the SC	☐ Final SAR endorsed by the SC ☐ SAR assigned a Standards Project by NERC ☐ SAR denied or proposed as Guidance document
Risk Tracking.	
☐ Grid Transformation ☒ Resilience/Extreme Events ☐ Security Risks	☐ Energy Policy ☐ Critical Infrastructure Interdependencies

Version History

Version	Date	Owner	Change Tracking
1	June 3, 2013		Revised
1	August 29, 2014	Standards Information Staff	Updated template
2	January 18, 2017	Standards Information Staff	Revised
2	June 28, 2017	Standards Information Staff	Updated template
3	February 22, 2019	Standards Information Staff	Added instructions to submit via Help Desk
4	February 25, 2020	Standards Information Staff	Updated template footer
5	August 14, 2023	Standards Development Staff	Updated template as part of Standards Process Stakeholder Engagement Group
6	June 4, 2023	Standards Information Staff	Updated link to the NERC Reliability Principles

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SAR Comment Form

Project 2024-03 Revisions to EOP-012-2

Do not use this form for submitting comments. Use the Standards Balloting and Commenting System (SBS) to submit comments on **Project 2024-03 Revisions to EOP-012-2** by **8 p.m. Eastern, Friday, August 16, 2024.**

Additional information is available on the project page. If you have questions, contact Senior Standards Developer, Ben Wu (via email), or at 470-542-6882.

Background Information

NERC developed the original version of the generator cold weather preparedness Reliability Standard EOP-012-1 in 2022, under Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination. The purpose of this project was to address standards-related recommendations from the Federal Energy Regulatory Commission (FERC)/NERC/Regional Entity staff review of operations during the February 2021 Winter Storm Uri event.

NERC developed Reliability Standard EOP-012-2 in 2023-2024 to address Commission directives from the February 2023 order approving Reliability Standards EOP-012-1 and EOP-011-3.[1] In the February 2023 Order, the Commission directed that NERC revise EOP-012-1 to clarify the applicability of the standard's requirements for generator cold weather preparedness, further define the circumstances under which a Generator Owner may declare that constraints preclude them from implementing one or more corrective actions to address freezing issues, and to shorten the implementation timeline so cold weather reliability risks would be addressed more quickly.

On June 27, 2024, FERC issued an order approving Reliability Standard EOP-012-2.[2] While finding Reliability Standard EOP-012-2 represented an improvement over the prior version and addressed many of its concerns, FERC found the standard requires further improvement to address certain concerns remaining from its February 2023 order. FERC therefore directed NERC to revise the standard in five areas and to submit a revised standard within nine (9) months of the date of the order, or by March 27, 2025.

1 *N. Am. Elec. Reliability Corp.*, 182 ¶ 61,094 (2023) ("February 2023 Order").

2 *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61, 204 (2024) ("June 2024 Order").

Questions

1. In paragraph 47 of the June 2024 Order, FERC directs NERC to revise EOP-012-2 to "ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them." FERC provides several examples of how NERC may meet directives in this paragraph and explains that NERC may address these concerns in an equally efficient and effective manner, provided NERC explains how it addresses FERC's concerns.

   Do you agree with any of the examples provided by FERC in how it may meet the directives? If so, please explain. If you do not agree, but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions for the drafting team.
   ☐ Yes
   ☐ No

   Comments:

2. In paragraph 47 of the June 2024 Order, FERC directs NERC to develop and submit modifications to the Generator Cold Weather Constraint definition of Reliability Standard EOP-012-2, to remove the references to "cost," "reasonable cost," "unreasonable cost," and "good business practices" and replace them with criteria that are objective, unambiguous, and auditable. FERC further explains that NERC may address these concerns in an equally efficient and effective manner, provided NERC explains how it addresses FERC's concerns. Do you believe there are alternative criteria that are objective, unambiguous, and auditable? If so, please provide your suggestions for the drafting team. If you do not believe there are alternative criteria, or believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions for the drafting team.

   ☐ Yes
   ☐ No

   Comments:

3. In paragraph 54 of the June 2024 Order, FERC directs NERC to modify EOP-012-2 so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner. FERC further explains that NERC may address its concerns in an equally efficient and effective manner, provided NERC explains how it addresses FERC's concerns. Would you recommend the drafting team modify EOP-012-2 to provide for an ERO pre-review process for constraint declarations? If not, please provide your suggestions that would address FERC's concerns in an equally efficient and effective manner.

☐ Yes
☐ No

Comments:

4. In paragraph 68 of the June 2024 Order, FERC directs NERC to modify Requirement R7 of EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. FERC provides an example for how to address this directive, such as to require shorter timeframes for those units that have experienced issues and allow longer timeframes to address similar potential issues across a fleet for those units that have not experienced issues. Do you agree with modifying Requirement R7 of EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event? If so, please provide your suggestions for alternative timeframes. If you do not agree, or believe the directive may be addressed in an equally effective and efficient manner, please provide your suggestions for the drafting team.

   ☐ Yes
   ☐ No

   Comments:

5. In paragraph 70 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC. Do you agree with this approach? If so, please provide your suggestions for standards revisions for the drafting team. If not, please provide your suggestions for addressing this directive in an equally effective and efficient manner.

   ☐ Yes
   ☐ No

   Comments:

6. In paragraph 72 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to clarify that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date. Do you agree that revisions to Requirement R7 would best address this directive? If not, please provide your suggestions for addressing this directive in an equally effective and efficient manner.

   ☐ Yes
   ☐ No

   Comments:

7. In paragraph 76 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to address certain ambiguities by expanding on Requirement R7.1.1 and 7.1.2 to make it clear which corrective action plan implementation deadline applies to which generator owner, explaining that it is not clear which timeline applies when a generator owner must implement both existing and new equipment for freeze protection measures. Do you agree with this approach? If so, please provide your suggestions for the drafting team. If not, please provide your suggestions for addressing this directive in an equally effective and efficient manner.

   ☐ Yes
   ☐ No

   Comments:

8. In paragraph 94 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R8, Part 8.1 of Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations (than every five years) to verify that the declaration remains valid. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns. Do you agree with revising Requirement R8, Part 8.1 of Reliability Standard EOP-012-2 to require more frequent reviews to address this directive? If so, please provide your suggestions for an alternative timeframe, along with supporting rationale. If not, please provide your suggestions for addressing this directive in an equally effective and efficient manner.

   ☐ Yes
   ☐ No

   Comments:

9. In the June 2024 Order, FERC directs NERC to submit the directed modifications within nine (9) months of the date of the order, or by March 27, 2025. If you have any recommendations for how the drafting team may best conduct consensus building activities within the directed timeframe and in consideration of the shorter-than-typical comment periods meeting this timeframe will require, please provide and explain your suggestions below.

   Comments:

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2024-03 Revisions to EOP-012-2 Standard Authorization Request

Informal Comment Period Open through August 16, 2024

Now Available

A 30-day informal comment period for the **Project 2024-03 Revisions to EOP-012-2** Standard Authorization Request (SAR), is open through **8 p.m. Eastern, Friday, August 16, 2024**.

Commenting

Use the Standards Balloting and Commenting System (SBS) to submit comments. An unofficial Word version of the comment form is posted on the project page.

- *Contact NERC IT support directly at https://support.nerc.net/ (Monday – Friday, 8 a.m. - 5 p.m. Eastern) for problems regarding accessing the SBS due to a forgotten password, incorrect credential error messages, or system lock-out.*
- *Passwords expire every **6 months** and must be reset.*
- *The SBS **is not** supported for use on mobile devices.*
- *Please be mindful of ballot and comment period closing dates. We ask to **allow at least 48 hours** for NERC support staff to assist with inquiries. Therefore, it is recommended that users try logging into their SBS accounts **prior to the last day** of a comment/ballot period.*

Next Steps

The drafting team will review all responses received during the comment period and determine the next steps of the project.

For information on the Standards Development Process, refer to the Standard Processes Manual.

For more information or assistance, contact Senior Standards Developer, Ben Wu (via email) or at 470-542-6882. Subscribe to this project's observer mailing list by selecting "NERC Email Distribution Lists" from the "Service" drop-down menu and specify “Project 2024-03 Revisions to EOP-012-2 observer list” in the Description Box.

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Revisions to EOP-012-2
Standard Authorization Request and Project Waivers

Action

- Accept the Revisions to EOP-012-2 Standard Authorization Request (SAR);
- Approve the following waiver of provisions of the Standard Processes Manual (SPM) for Project 2024-02 Revisions to EOP-012-2:
  - Informal comment period for SAR reduced from 30 days to as few as 15 days (Section 4.2);
  - Initial formal comment and ballot period(s) reduced from 45 days to as little as 20 days, with the ballot pool formed concurrently during the first 10 days of the initial formal comment period, and with the ballot and non-binding poll of Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) conducted concurrently during the last 5 days of the comment period (Sections 4.8 and 4.9);
  - Additional formal comment and ballot period(s) reduced from 30 days to as little as 15 days, with the ballot and non-binding poll of VRFs and VSLs conducted concurrently during the last 5 days of the comment period (Sections 4.9 and 4.12);
  - Final ballot period(s) reduced from 10 days to as little as 5 days (Section 4.13);
- Authorize posting of the SAR for an informal comment period of at least 15 days;
- Authorize solicitation of the drafting team (DT) members for a period of at least 15 days; and
- Delegate to Standards Committee Executive Committee (SCEC) authority to act on the following actions:
  - Appoint members, chair, and vice chair to the DT for this project as recommended by NERC Staff;
  - Accept a revised Revisions to EOP-012-2 SAR; and
  - Authorize drafting the proposed Reliability Standard or revisions to the standard.

Background

NERC developed the original version of the generator cold weather preparedness Reliability Standard, Reliability Standard EOP-012-1, in 2022 under Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination. The purpose of this project was to address standards-related recommendations from the Federal Energy Regulatory Commission (FERC)/NERC/Regional Entity staff review of operations during the February 2021 Winter Storm Uri event.

NERC developed Reliability Standard EOP-012-2 in 2023-2024 to address Commission directives from the February 2023 order approving Reliability Standards EOP-012-1 and EOP-011-3.[1] In the February 2023 Order, the Commission directed that NERC revise EOP-012-1 to clarify the applicability of the standard's requirements for generator cold weather preparedness, further define the circumstances under which a Generator Owner may declare that constraints preclude them from implementing one or more corrective actions to address freezing issues, and to

[1] *N. Am. Elec. Reliability Corp*., 182 ¶ 61,094 (2023) ("February 2023 Order").

shorten the implementation timeline so cold weather reliability risks would be addressed more quickly. Due to FERC's one-year deadline, the Standards Committee (SC) authorized two sets of SPM waivers to ensure a timely completion. Nevertheless, due to the complex nature of the issues presented, the development process was not complete until approximately seven days prior to the FERC filing deadline.

On June 27, 2024, FERC issued an order approving Reliability Standard EOP-012-2.[2] While finding Reliability Standard EOP-012-2 represented an improvement over the prior version, and addressed many of its concerns, FERC found the standard requires further improvement to address certain concerns remaining from its February 2023 order. FERC, therefore, directed NERC to revise the standard in five areas, and to submit a revised standard within nine (9) months of the date of the order, or by **March 27, 2025.**

As work under Project 2021-07 has concluded, NERC Management submitted a SAR to form a new project to address the directives from FERC's June 2024 order.

Section 4.2 of the SPM, SAR Posting, provides as follows:

- When the SC determines it is ready to initiate a new project, the SC shall direct NERC Staff to post the project's SAR in accordance with the following:
  - For SARs that are limited to addressing regulatory directives, or revisions to Reliability Standards that have had some vetting in the industry as determined by the SC, authorize posting of the SAR for a 30-day informal comment period, with no requirement to provide a formal response to the comments received.

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Section 16.0 of the SPM, Waiver, states: "The Standards Committee may waive any of the provisions contained in this manual for good cause shown, but limited to the following circumstances...where necessary to meet regulatory deadlines."

Under Chapter 7 of the SC Charter, the SCEC is authorized by the SC to act on its behalf, between regular meetings on matters where urgent actions are crucial and full SC discussions are not practical. The SCEC has the authority to, among other things, act on the SC's behalf to authorize postings of Reliability Standards, and to take any other actions not specified in the Charter that are delegated by the SC.

Summary

Due to the complex nature of the issues to be addressed in this round of development, which have been considered at length in two phases before, the history of EOP-012 development, and the nine-month deadline for submission, this project will be classified as high priority and NERC Staff recommends the SC afford all procedural flexibilities available to ensure the DT and NERC's stakeholders have sufficient time to develop a consensus standard addressing the FERC directives.

NERC Staff recommends the SC authorize an informal comment period for the SAR, as required by the SPM, as it is limited to addressing the FERC directives from the June 2024 Order.

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[2] *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61, 204 (2024) ("June 2024 Order").

NERC Staff recommends the SC authorize procedural waivers under Section 16.0 of the SPM at the outset of the project. Many of the issues remaining to be addressed in the proposed project were discussed at length in the prior proceedings, and in the FERC approval proceedings. Nevertheless, procedural flexibilities will be needed to allow for as fulsome a consideration of the issues as is possible under the circumstances. NERC will endeavor to provide as much time as is reasonably possible for industry to comment on each draft, which may be longer than the minimum periods recommended above.

NERC Staff also recommends the SC delegate authority to take certain intermediate actions to the SCEC. Consistent with prior SCEC authorizations and the SC Charter, the SCEC would be asked to consider any actions delegated to it in a properly noticed, public session, with the results publicly reported. To the extent the schedule permits consideration of these items by the full Committee, NERC Staff will endeavor to do so.

Should the SC accept the SAR and authorize its posting for an informal comment period as required by the SPM, NERC Staff would prepare a suite of questions intended to solicit stakeholder feedback on how to best address the FERC directives. This feedback would be presented to the DT so it may be taken into consideration when preparing the first draft of a revised EOP-012-3 standard. NERC Staff believes that adopting such an approach is most likely to benefit the consensus process over general questions about scope and reliability need, as the "need" for the project has already been established by the June 2024 Order, and the scope for the project is limited to addressing the directives from that order.

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NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standard Authorization Request (SAR)

Complete and submit this form, with attachment(s) to the NERC Help Desk. Upon entering the Captcha, please type in your contact information, and attach the SAR to your ticket. Once submitted, you will receive a confirmation number which you can use to track your request.

The North American Electric Reliability Corporation (NERC) welcomes suggestions to improve the reliability of the bulk power system through improved Reliability Standards.

Requested information			
SAR Title:	Revisions to EOP-012-2		
Date Submitted:	July 1, 2024 (Revised August 27,2024)		
SAR Requester			
Name:	Soo Jin Kim, Vice President of Engineering and Standards (Revised by the 2024-03 Drafting Team)		
Organization:	NERC		
Telephone:		Email:	Soo.jin.kim@nerc.net

SAR Type (Check as many as apply)	
☐ New Standard ☒ Revision to Existing Standard ☒ Add, Modify or Retire a Glossary Term ☐ Withdraw/retire an Existing Standard	☐ Imminent Action/ Confidential Issue (SPM Section 10) ☐ Variance development or revision ☐ Other (Please specify)

Justification for this proposed standard development project (Check all that apply to help NERC prioritize development)	
☒ Regulatory Initiation ☐ Emerging Risk (Reliability Issues Steering Committee) Identified ☐ Reliability Standard Development Plan	☐ NERC Standing Committee Identified ☐ Enhanced Periodic Review Initiated ☐ Industry Stakeholder Identified

What is the risk to the Bulk Electric System (What Bulk Electric System (BES) reliability benefit does the proposed project provide?):

Multiple winter storm events since 2011 have demonstrated the risk to the Bulk Power System when generators fail to prepare adequately for extreme cold weather conditions. The EOP-012 Reliability Standard provides a comprehensive framework of requirements for generator cold weather preparedness to ensure that more generators are available during extreme cold weather conditions and not forced offline due to foreseeable freezing issues. FERC, however, has identified several ambiguities and other reliability issues which could reduce the effectiveness of this standard. FERC directed NERC to revise EOP-012-2 and associated definitions to address these issues by March 2025.

Purpose or Goal (What are the reliability gap(s) or risk(s) to the Bulk Electric System being addressed, and how does this proposed project provide the reliability-related benefit described above?):

The purpose of this project is to address the directives identified by FERC in its June 27, 2024 order approving Reliability Standard EOP-012-2 and directing further modifications. *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61,204 (2024). In that order, FERC found that further improvements needed to be

Requested information
made to address ambiguous language and address other reliability gaps/implementation issues in the standard and related definitions to fully address issues first raised in the Commission's February 2023 Order approving EOP-012-1. *See N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094, PP 3-11 (2023) (February 2023 Order); *reh'g denied*, 183 FERC ¶ 62,034, *order on reh'g*, 183 FERC ¶ 61,222 (2023). FERC directed that NERC submit the modifications within 9 months of the date of the order, or by March 27, 2025.
Project Scope (Define the parameters of the proposed project):
The drafting team is charged with addressing the standards modification directives from the June 2024 FERC order approving EOP-012-2. The FERC order directives are provided in the Detailed Description section below. The drafting team should propose standards modifications responding to the FERC directives, either as directed by FERC or in an equally effective and efficient manner as supported by the drafting team. In addition, the drafting team will have flexibility to address the directives in the manner it deems best, which may include revising existing requirements or *Glossary* definitions or drafting new ones. The drafting team will also have flexibility to make minor clarifying modifications, in addition to the FERC directives, to EOP-012-2 or the supporting documentation as the team sees appropriate. Issues related to compliance monitoring approaches will be addressed by NERC Staff. The drafting team should coordinate with NERC Staff when developing standards modifications to leverage existing NERC processes and tools to the extent feasible. Although it is not believed to be necessary to address the directives, to the extent a drafting team determines creating a new standard or revising another existing standard would provide the optimal approach for addressing one or more of these directives, the drafting team should have the flexibility to pursue that approach. Summarizing the June 2024 FERC Order, the drafting team's scope is: • To address concerns related to the ambiguity of the Generator Cold Weather Constraint term and criteria (P 47); • To address concerns regarding the need for a timely review and evaluation of declared Generator Cold Weather Constraints by NERC (P 54); • To address concerns that existing EOP-012-2 Requirement R7 allows too long for entities to implement corrective actions for existing or new equipment or freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event (P 68); • To address the finding that any extensions of a Corrective Action Plan implementation deadline beyond the maximum implementation timeframe provided by the standard be pre-approved by NERC (P 70); • To address the finding that generators that are first commercially operational on or after October 1, 2027, should have freeze protection measures either designed into their generating

Requested information
systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation (P 72); • To address concerns that EOP-012-2 Requirement R7 has ambiguities in the implementation plan timelines that apply to certain generator owners (P 76); and, To address the concern that Generator Cold Weather Constraint declarations should be reviewed more frequently than once every five years to ensure the constraint remains valid (P
Detailed Description (Describe the proposed deliverable(s) with sufficient detail for a drafting team to execute the project. If you propose a new or substantially revised Reliability Standard or definition, provide: (1) a technical justification[1] of developing a new or revised Reliability Standard or definition, which includes a discussion of the risk and impact to reliability-of the BES, and (2) a technical foundation document (*e.g.,* research paper) to guide development of the Standard or definition):
The drafting team is charged with addressing the standards modification directives from the June 2024 order and making other minor clarifying revisions as it deems appropriate and supported by stakeholder consensus. It is noted that the FERC Order includes tasks outside the purview of the drafting team. Those portions of the order that will not be addressed by the drafting team are italicized below for clarity. **Directives to Revise the Definition of Generator Cold Weather Constraint and Clarify Requirements for Declared Constraints** P 47: Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit to the Commission for approval modifications to proposed Reliability Standard EOP-012-2 that address concerns related to the ambiguity of the newly defined Generator Cold Weather Constraint term and criteria. Specifically, we direct NERC to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them. One approach to satisfy this directive could be to incorporate into the proposed Reliability Standard a limited and discrete list of circumstances that would qualify as acceptable constraints. We note that NERC's technical rationale document, created by NERC's Standard Drafting Team and included in NERC's filing, includes a list of technical constraints that could serve as a starting point for a list of circumstances that would qualify as acceptable constraints. To the extent that NERC continues to believe that the extent of industry adoption for winterization technologies should be a criterion for declaring a constraint, NERC should clearly explain in its filing how it will assess the extent of such adoption in a way that provides for consistent compliance and enforcement outcomes. Alternatively, NERC could establish a pre-approval process for all Generator Cold Weather Constraint declarations. While a clearly defined list may be preferable, a pre-approval process could be established to ensure entities' declared Generator Cold Weather Constraints are appropriate and can be supported and defended. Further, as part of the directive to develop and

[1] The NERC Rules of Procedure require a technical justification for new or substantially revised Reliability Standards. Please attach pertinent information to this form before submittal to NERC.

Requested information
submit modifications to the Generator Cold Weather Constraint definition of proposed Reliability Standard EOP-012-2, we direct NERC, pursuant to section 215(d)(5) of the FPA, to remove the references to "cost," "reasonable cost," "unreasonable cost," and "good business practices" and replace them with criteria that are objective, unambiguous, and auditable. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns. P 54: Accordingly, we again direct NERC, pursuant to section 215(d)(5) of the FPA, to modify proposed Reliability Standard so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner. *We also direct NERC to include in its compliance filing, a plan to timely review such declarations to verify compliance with proposed Reliability Standard EOP-012-2 and its successors or obligations in a corrective action plan and take corrective action where necessary.* For example, modifying Standard to require the generator owners to provide declarations (or changes to the declarations) to NERC within 45 days. *It is up to NERC whether it would like to delegate this task to the relevant Regional Entities.* NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns. **Revisions to Corrective Action Plan Requirements** P 68: Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. Based on compliance with Requirements R2 and R3, those generating units should have already had appropriate freeze protection measures implemented to be capable of operating at the generating units' respective Extreme Cold Weather Temperature. Therefore, we find that a shorter timeframe to implement corrective actions that address existing or new equipment or freeze protection measures is appropriate. For example, to satisfy this directive, NERC could require generator owners to implement corrective actions prior to the next winter season for generating units that experience a Cold Weather Reliability Event and to complete freeze protection measures on similar equipment on all of its fleet within 24 months of becoming aware of the freeze issue. For corrective action plans that involve larger and more complicated implementations, NERC could incorporate a staggered 48-month corrective action plan implementation deadline. P 70: [W]e direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC… P 72: We…find that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial

Requested information
operation. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to clarify that any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date. P 76: We believe that proposed Reliability Standard EOP-012-2, Requirement R7's corrective action plan implementation deadlines have remaining ambiguities that need to be addressed. As noted above, the Commission has previously expressed similar concerns regarding the vagueness and enforceability of Reliability Standards language. Specifically, we agree with the concerns raised by the ISO/RTO Council that Requirement R7 of proposed Reliability Standard EOP-012-2 does not provide clear direction as to the required corrective action plan implementation timeline that applies to certain generator owners. For example, it is unclear how the corrective action plan implementation timeline would apply if a generator owner had combinations of both existing and new equipment for freeze protection measures. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to address these ambiguities by expanding on Requirement R7.1.1 and 7.1.2 to make it clear which corrective action plan implementation deadline applies to which generator owner. **Periodic Review of Generator Cold Weather Constraint Declarations** P 94: We agree with the ISO/RTO Council that the proposed five-year review period for the declared Generator Cold Weather Constraints in Requirement R8.1 could delay the identification and adoption of new freeze protection measures and does not represent the current pace of technological advancements. We acknowledge that a more frequent review does impose some additional administrative burden to the generator owner to review the technological advancements that hindered its ability to winterize; nonetheless, a lengthy period between a Generator Cold Weather Constraint declaration review by the generator owner offers little incentive to timely adopt new freeze protection technologies. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R8, Part 8.1 of proposed Reliability Standard EOP 012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations to verify that the declaration remains valid. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns. In addressing these directives, the drafting team should familiarize itself with June 2024 Order approving EOP-012-2 and the February 2023 Order approving EOP-012-1, which discuss the directives and the underlying rationale for those directives. The drafting team should also familiarize itself with the records of development for EOP-012-1 and EOP-012-2, as well as the *FERC/NERC/Regional Entity Staff Report: The February 2021 Cold Weather Outages in Texas and the South Central United States* (Nov. 2021) that prompted the development of the EOP-012 standard.

Requested information
Cost Impact Assessment, if known (Provide a paragraph describing the potential cost impacts associated with the proposed project):
Cost impacts are unknown at this time.
Please describe any unique characteristics of the BES facilities that may be impacted by this proposed standard development project (*e.g.*, Dispersed Generation Resources):
BES generating facilities
To assist the NERC Standards Committee in appointing a drafting team with the appropriate members, please indicate to which Functional Entities the proposed standard(s) should apply (*e.g.*, Transmission Operator, Reliability Coordinator, etc. See the NERC Rules of Procedure Appendix 5A:
The Generator Owner and Generator Operator are the applicable entities; however, the standard drafting team should also include other Functional Entities that ensure the reliability of the Bulk-Power System during extreme cold weather conditions (e.g., Balancing Authority, Reliability Coordinator, Transmission Operator).
Do you know of any consensus building activities[2] in connection with this SAR? If so, please provide any recommendations or findings resulting from the consensus building activity.
None
Are there any related standards or SARs that should be assessed for impact as a result of this proposed project? If so, which standard(s) or project number(s)?
None
Are there alternatives (e.g., guidelines, white paper, alerts, etc.) that have been considered or could meet the objectives? If so, please list the alternatives with the benefits of using them.
FERC directed that NERC revise the EOP-012 standard; other alternatives would not meet the objectives of this project.

Reliability Principles	
Does this proposed standard development project support at least one of the following Reliability Principles (Reliability Principles)? Please check all those that apply.	
☒	1. Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
☒	2. The frequency and voltage of interconnected bulk power systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
☒	3. Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably.
☐	4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained and implemented.

[2] Consensus building activities are occasionally conducted by NERC and/or project review teams. They typically are conducted to obtain industry inputs prior to proposing any standard development project to revise, or develop a standard or definition.

Reliability Principles	
☐	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk power systems.
☒	6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.
☐	7. The security of the interconnected bulk power systems shall be assessed, monitored and maintained on a wide area basis.
☐	8. Bulk power systems shall be protected from malicious physical or cyber attacks.

Market Interface Principles	
Does the proposed standard development project comply with all of the following Market Interface Principles?	Enter (yes/no)
1. A reliability standard shall not give any market participant an unfair competitive advantage.	Yes
2. A reliability standard shall neither mandate nor prohibit any specific market structure.	Yes
3. A reliability standard shall not preclude market solutions to achieving compliance with that standard.	Yes
4. A reliability standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards.	Yes

Identified Existing or Potential Regional or Interconnection Variances	
Region(s)/ Interconnection	Explanation
e.g., NPCC	

For Use by NERC Only

SAR Status Tracking (Check off as appropriate).	
☐ Draft SAR reviewed by NERC Staff ☐ Draft SAR presented to SC for acceptance ☐ DRAFT SAR approved for posting by the SC	☐ Final SAR endorsed by the SC ☐ SAR assigned a Standards Project by NERC ☐ SAR denied or proposed as Guidance document
Risk Tracking.	
☐ Grid Transformation ☒ Resilience/Extreme Events	☐ Energy Policy ☐ Critical Infrastructure Interdependencies
☐ Security Risks	

Version History

Version	Date	Owner	Change Tracking
1	June 3, 2013		Revised
1	August 29, 2014	Standards Information Staff	Updated template
2	January 18, 2017	Standards Information Staff	Revised
2	June 28, 2017	Standards Information Staff	Updated template
3	February 22, 2019	Standards Information Staff	Added instructions to submit via Help Desk
4	February 25, 2020	Standards Information Staff	Updated template footer
5	August 14, 2023	Standards Development Staff	Updated template as part of Standards Process Stakeholder Engagement Group
6	June 4, 2023	Standards Information Staff	Updated link to the NERC Reliability Principles

Standard Authorization Request (SAR)

Complete and submit this form, with attachment(s) to the NERC Help Desk. Upon entering the Captcha, please type in your contact information, and attach the SAR to your ticket. Once submitted, you will receive a confirmation number which you can use to track your request.

The North American Electric Reliability Corporation (NERC) welcomes suggestions to improve the reliability of the bulk power system through improved Reliability Standards.

Requested information			
SAR Title:	Revisions to EOP-012-2		
Date Submitted:	July 1, 2024 (Revised August 27,2024)		
SAR Requester			
Name:	Soo Jin Kim, Vice President of Engineering and Standards (Revised by the 2024-03 Drafting Team)		
Organization:	NERC		
Telephone:		Email:	Soo.jin.kim@nerc.net
SAR Type (Check as many as apply)			
☐ New Standard ☒ Revision to Existing Standard ☒ Add, Modify or Retire a Glossary Term ☐ Withdraw/retire an Existing Standard		☐ Imminent Action/ Confidential Issue (SPM Section 10) ☐ Variance development or revision ☐ Other (Please specify)	
Justification for this proposed standard development project (Check all that apply to help NERC prioritize development)			
☒ Regulatory Initiation ☐ Emerging Risk (Reliability Issues Steering Committee) Identified ☐ Reliability Standard Development Plan		☐ NERC Standing Committee Identified ☐ Enhanced Periodic Review Initiated ☐ Industry Stakeholder Identified	
What is the risk to the Bulk Electric System (What Bulk Electric System (BES) reliability benefit does the proposed project provide?):			
Multiple winter storm events since 2011 have demonstrated the risk to the Bulk Power System when generators fail to prepare adequately for extreme cold weather conditions. The EOP-012 Reliability Standard provides a comprehensive framework of requirements for generator cold weather preparedness to ensure that more generators are available during extreme cold weather conditions and not forced offline due to foreseeable freezing issues. FERC, however, has identified several ambiguities and other reliability issues which could reduce the effectiveness of this standard. FERC directed NERC to revise EOP-012-2 and associated definitions to address these issues by March 2025.			
Purpose or Goal (What are the reliability gap(s) or risk(s) to the Bulk Electric System being addressed, and how does this proposed project provide the reliability-related benefit described above?):			
The purpose of this project is to address the directives identified by FERC in its June 27, 2024 order approving Reliability Standard EOP-012-2 and directing further modifications. *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61,204 (2024). In that order, FERC found that further improvements needed to be			

Requested information
made to address ambiguous language and address other reliability gaps/implementation issues in the standard and related definitions to fully address issues first raised in the Commission's February 2023 Order approving EOP-012-1. *See N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094, PP 3-11 (2023) (February 2023 Order); *reh'g denied*, 183 FERC ¶ 62,034, *order on reh'g*, 183 FERC ¶ 61,222 (2023). FERC directed that NERC submit the modifications within 9 months of the date of the order, or by March 27, 2025.
Project Scope (Define the parameters of the proposed project):
~~The scope of this project will be to revise the EOP-012-2 standard and its associated *Glossary* definitions to address the directives for further modifications identified by FERC in its June 2024 Order approving EOP-012-2.~~ The drafting team is charged with addressing the standards modification directives from the June 2024 FERC order approving EOP-012-2. The FERC Order directives are provided in the Detailed Description section below. The drafting team should propose standards modifications responding to the FERC directives, either as directed by FERC or in an equally effective and efficient manner as supported by the drafting team. In addition, ~~T~~the drafting team will have flexibility to address the directives in the manner it deems best, which may include revising existing requirements or ~~and~~ *Glossary* definitions or drafting new ones. The drafting team will also have flexibility to make minor clarifying modifications, in addition to the FERC directives, to EOP-012-2 or the supporting documentation as the team sees appropriate. Issues related to compliance monitoring approaches will be addressed by NERC Staff. The drafting team should coordinate with NERC Staff when developing standards modifications to leverage existing NERC processes and tools to the extent feasible. Although it is not believed to be necessary to address the directives, to the extent a drafting team determines creating a new standard or revising another existing standard would provide the optimal approach for addressing one or more of these directives, the drafting team should have the flexibility to pursue that approach. Summarizing the June 2024 FERC Order, the drafting team's scope is: • To address concerns related to the ambiguity of the Generator Cold Weather Constraint term and criteria (P 47); • To address concerns regarding the need for a timely review and evaluation of declared Generator Cold Weather Constraints by NERC (P 54); • To address concerns that existing EOP-012-2 Requirement R7 allows too long for entities to implement corrective actions for existing or new equipment or freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event (P 68); • To address the finding that any extensions of a Corrective Action Plan implementation deadline beyond the maximum implementation timeframe provided by the standard be pre-approved by NERC (P 70);

Requested information

- To address the finding that generators that are first commercially operational on or after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation (P 72);

- To address concerns that EOP-012-2 Requirement R7 has ambiguities in the implementation plan timelines that apply to certain generator owners (P 76); and,
- To address the concern that Generator Cold Weather Constraint declarations should be reviewed more frequently than once every five years to ensure the constraint remains valid (P 94).

~~The drafting team will be charged with addressing the standards modification directives from the June 2024 order, which include:~~

~~*Directives to Revise the Definition of Generator Cold Weather Constraint and Clarify Requirements for Declared Constraints*~~

~~P 47: Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit to the Commission for approval modifications to proposed Reliability Standard EOP-012-2 that address concerns related to the ambiguity of the newly defined Generator Cold Weather Constraint term and criteria. Specifically, we direct NERC to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them. One approach to satisfy this directive could be to incorporate into the proposed Reliability Standard a limited and discrete list of circumstances that would qualify as acceptable constraints. We note that NERC's technical rationale document, created by NERC's Standard Drafting Team and included in NERC's filing, includes a list of technical constraints that could serve as a starting point for a list of circumstances that would qualify as acceptable constraints. To the extent that NERC continues to believe that the extent of industry adoption for winterization technologies should be a criterion for declaring a constraint, NERC should clearly explain in its filing how it will assess the extent of such adoption in a way that provides for consistent compliance and enforcement outcomes. Alternatively, NERC could establish a pre-approval process for all Generator Cold Weather Constraint declarations. While a clearly defined list may be preferable, a pre-approval process could be established to ensure entities' declared Generator Cold Weather Constraints are appropriate and can be supported and defended. Further, as part of the directive to develop and submit modifications to the Generator Cold Weather Constraint definition of proposed Reliability Standard EOP-012-2, we direct NERC, pursuant to section 215(d)(5) of the FPA, to remove the references to "cost," "reasonable cost," "unreasonable cost," and "good business practices" and replace them with criteria that are objective, unambiguous, and auditable. NERC may propose to develop~~

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~~modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns.~~

~~P 54: Accordingly, we again direct NERC, pursuant to section 215(d)(5) of the FPA, to modify proposed Reliability Standard so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner. We also direct NERC to include in its compliance filing, a plan to timely review such declarations to verify compliance with proposed Reliability Standard EOP-012-2 and its successors or obligations in a corrective action plan and take corrective action where necessary. For example, modifying Standard to require the generator owners to provide declarations (or changes to the declarations) to NERC within 45 days. It is up to NERC whether it would like to delegate this task to the relevant Regional Entities. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns.~~

~~*Revisions to Corrective Action Plan Requirements*~~
~~P 68: Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. Based on compliance with Requirements R2 and R3, those generating units should have already had appropriate freeze protection measures implemented to be capable of operating at the generating units' respective Extreme Cold Weather Temperature. Therefore, we find that a shorter timeframe to implement corrective actions that address existing or new equipment or freeze protection measures is appropriate. For example, to satisfy this directive, NERC could require generator owners to implement corrective actions prior to the next winter season for generating units that experience a Cold Weather Reliability Event and to complete freeze protection measures on similar equipment on all of its fleet within 24 months of becoming aware of the freeze issue. For corrective action plans that involve larger and more complicated implementations, NERC could incorporate a staggered 48-month corrective action plan implementation deadline.~~

~~P 70: [W]e direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC…~~

~~P 72: We…find that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to clarify that any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date.~~

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~~P 76: We believe that proposed Reliability Standard EOP-012-2, Requirement R7's corrective action plan implementation deadlines have remaining ambiguities that need to be addressed. As noted above, the Commission has previously expressed similar concerns regarding the vagueness and enforceability of Reliability Standards language. Specifically, we agree with the concerns raised by the ISO/RTO Council that Requirement R7 of proposed Reliability Standard EOP-012-2 does not provide clear direction as to the required corrective action plan implementation timeline that applies to certain generator owners. For example, it is unclear how the corrective action plan implementation timeline would apply if a generator owner had combinations of both existing and new equipment for freeze protection measures. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to address these ambiguities by expanding on Requirement R7.1.1 and 7.1.2 to make it clear which corrective action plan implementation deadline applies to which generator owner.~~ ~~*Periodic Review of Generator Cold Weather Constraint Declarations*~~ ~~P 94: We agree with the ISO/RTO Council that the proposed five-year review period for the declared Generator Cold Weather Constraints in Requirement R8.1 could delay the identification and adoption of new freeze protection measures and does not represent the current pace of technological advancements. We acknowledge that a more frequent review does impose some additional administrative burden to the generator owner to review the technological advancements that hindered its ability to winterize; nonetheless, a lengthy period between a Generator Cold Weather Constraint declaration review by the generator owner offers little incentive to timely adopt new freeze protection technologies. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R8, Part 8.1 of proposed Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations to verify that the declaration remains valid. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns.~~
Detailed Description (Describe the proposed deliverable(s) with sufficient detail for a drafting team to execute the project. If you propose a new or substantially revised Reliability Standard or definition, provide: (1) a technical justification[1] of developing a new or revised Reliability Standard or definition, which includes a discussion of the risk and impact to reliability-of the BES, and (2) a technical foundation document (*e.g.,* research paper) to guide development of the Standard or definition):
The drafting team is charged with addressing the standards modification directives from the June 2024 order and making other minor clarifying revisions as it deems appropriate and supported by stakeholder consensus. It is noted that the FERC Order includes tasks outside the purview of the drafting team.

[1] The NERC Rules of Procedure require a technical justification for new or substantially revised Reliability Standards. Please attach pertinent information to this form before submittal to NERC.

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Those portions of the order that will not be addressed by the drafting team are italicized below for clarity.

Directives to Revise the Definition of Generator Cold Weather Constraint and Clarify Requirements for Declared Constraints

P 47: Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit to the Commission for approval modifications to proposed Reliability Standard EOP-012-2 that address concerns related to the ambiguity of the newly defined Generator Cold Weather Constraint term and criteria. Specifically, we direct NERC to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them. One approach to satisfy this directive could be to incorporate into the proposed Reliability Standard a limited and discrete list of circumstances that would qualify as acceptable constraints. We note that NERC's technical rationale document, created by NERC's Standard Drafting Team and included in NERC's filing, includes a list of technical constraints that could serve as a starting point for a list of circumstances that would qualify as acceptable constraints. To the extent that NERC continues to believe that the extent of industry adoption for winterization technologies should be a criterion for declaring a constraint, NERC should clearly explain in its filing how it will assess the extent of such adoption in a way that provides for consistent compliance and enforcement outcomes. Alternatively, NERC could establish a pre-approval process for all Generator Cold Weather Constraint declarations. While a clearly defined list may be preferable, a pre-approval process could be established to ensure entities' declared Generator Cold Weather Constraints are appropriate and can be supported and defended. Further, as part of the directive to develop and submit modifications to the Generator Cold Weather Constraint definition of proposed Reliability Standard EOP-012-2, we direct NERC, pursuant to section 215(d)(5) of the FPA, to remove the references to "cost," "reasonable cost," "unreasonable cost," and "good business practices" and replace them with criteria that are objective, unambiguous, and auditable. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns.

P 54: Accordingly, we again direct NERC, pursuant to section 215(d)(5) of the FPA, to modify proposed Reliability Standard so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner. *We also direct NERC to include in its compliance filing, a plan to timely review such declarations to verify compliance with proposed Reliability Standard EOP-012-2 and its successors or obligations in a corrective action plan and take corrective action where necessary.* For example, modifying Standard to require the generator owners to provide declarations (or changes to the declarations) to NERC within 45 days. *It is up to NERC whether it would like to delegate this task to the relevant Regional Entities.* NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns.

Requested information

Revisions to Corrective Action Plan Requirements

P 68: Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. Based on compliance with Requirements R2 and R3, those generating units should have already had appropriate freeze protection measures implemented to be capable of operating at the generating units' respective Extreme Cold Weather Temperature. Therefore, we find that a shorter timeframe to implement corrective actions that address existing or new equipment or freeze protection measures is appropriate. For example, to satisfy this directive, NERC could require generator owners to implement corrective actions prior to the next winter season for generating units that experience a Cold Weather Reliability Event and to complete freeze protection measures on similar equipment on all of its fleet within 24 months of becoming aware of the freeze issue. For corrective action plans that involve larger and more complicated implementations, NERC could incorporate a staggered 48-month corrective action plan implementation deadline.

P 70: [W]e direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC…

P 72: We…find that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to clarify that any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date.

P 76: We believe that proposed Reliability Standard EOP-012-2, Requirement R7's corrective action plan implementation deadlines have remaining ambiguities that need to be addressed. As noted above, the Commission has previously expressed similar concerns regarding the vagueness and enforceability of Reliability Standards language. Specifically, we agree with the concerns raised by the ISO/RTO Council that Requirement R7 of proposed Reliability Standard EOP-012-2 does not provide clear direction as to the required corrective action plan implementation timeline that applies to certain generator owners. For example, it is unclear how the corrective action plan implementation timeline would apply if a generator owner had combinations of both existing and new equipment for freeze protection measures. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to address these ambiguities by expanding on Requirement R7.1.1 and 7.1.2 to make it clear which corrective action plan implementation deadline applies to which generator owner.

Requested information
Periodic Review of Generator Cold Weather Constraint Declarations P 94: We agree with the ISO/RTO Council that the proposed five-year review period for the declared Generator Cold Weather Constraints in Requirement R8.1 could delay the identification and adoption of new freeze protection measures and does not represent the current pace of technological advancements. We acknowledge that a more frequent review does impose some additional administrative burden to the generator owner to review the technological advancements that hindered its ability to winterize; nonetheless, a lengthy period between a Generator Cold Weather Constraint declaration review by the generator owner offers little incentive to timely adopt new freeze protection technologies. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R8, Part 8.1 of proposed Reliability Standard EOP 012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations to verify that the declaration remains valid. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns. ~~The drafting team should propose standards modifications responding to the above-listed FERC directives, either as directed by FERC or in an equally effective and efficient manner as supported by the standard drafting team.~~ In addressing these directives, the drafting team should familiarize itself with June 2024 Order approving EOP-012-2 and the February 2023 Order approving EOP-012-1, which discuss the directives and the underlying rationale for those directives. The drafting team should also familiarize itself with the records of development for EOP-012-1 and EOP-012-2, as well as the *FERC/NERC/Regional Entity Staff Report: The February 2021 Cold Weather Outages in Texas and the South Central United States* (Nov. 2021) that prompted the development of the EOP-012 standard.
Cost Impact Assessment, if known (Provide a paragraph describing the potential cost impacts associated with the proposed project):
Cost impacts are unknown at this time.
Please describe any unique characteristics of the BES facilities that may be impacted by this proposed standard development project (*e.g.*, Dispersed Generation Resources):
BES generating facilities
To assist the NERC Standards Committee in appointing a drafting team with the appropriate members, please indicate to which Functional Entities the proposed standard(s) should apply (*e.g.*, Transmission Operator, Reliability Coordinator, etc. See the NERC Rules of Procedure Appendix 5A:
The Generator Owner and Generator Operator are the applicable entities; however, the standard drafting team should also include other Functional Entities that ensure the reliability of the Bulk-Power

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System during extreme cold weather conditions (e.g., Balancing Authority, Reliability Coordinator, Transmission Operator).
Do you know of any consensus building activities[2] in connection with this SAR? If so, please provide any recommendations or findings resulting from the consensus building activity.
None
Are there any related standards or SARs that should be assessed for impact as a result of this proposed project? If so, which standard(s) or project number(s)?
None
Are there alternatives (e.g., guidelines, white paper, alerts, etc.) that have been considered or could meet the objectives? If so, please list the alternatives with the benefits of using them.
FERC directed that NERC revise the EOP-012 standard; other alternatives would not meet the objectives of this project.

Reliability Principles	
Does this proposed standard development project support at least one of the following Reliability Principles (Reliability Principles)? Please check all those that apply.	
☒	1. Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
☒	2. The frequency and voltage of interconnected bulk power systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
☒	3. Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably.
☐	4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained and implemented.
☐	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk power systems.
☒	6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.
☐	7. The security of the interconnected bulk power systems shall be assessed, monitored and maintained on a wide area basis.
☐	8. Bulk power systems shall be protected from malicious physical or cyber attacks.

Market Interface Principles	
Does the proposed standard development project comply with all of the following Market Interface Principles?	Enter (yes/no)
1. A reliability standard shall not give any market participant an unfair competitive advantage.	Yes

[2] Consensus building activities are occasionally conducted by NERC and/or project review teams. They typically are conducted to obtain industry inputs prior to proposing any standard development project to revise, or develop a standard or definition.

Market Interface Principles	
2. A reliability standard shall neither mandate nor prohibit any specific market structure.	Yes
3. A reliability standard shall not preclude market solutions to achieving compliance with that standard.	YeEs
4. A reliability standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards.	Yes

Identified Existing or Potential Regional or Interconnection Variances	
Region(s)/ Interconnection	Explanation
e.g., NPCC	

For Use by NERC Only

SAR Status Tracking (Check off as appropriate).	
☐ Draft SAR reviewed by NERC Staff ☐ Draft SAR presented to SC for acceptance ☐ DRAFT SAR approved for posting by the SC	☐ Final SAR endorsed by the SC ☐ SAR assigned a Standards Project by NERC ☐ SAR denied or proposed as Guidance document
Risk Tracking.	
☐ Grid Transformation ☒ Resilience/Extreme Events	☐ Energy Policy ☐ Critical Infrastructure Interdependencies
☐ Security Risks	

Version History

Version	Date	Owner	Change Tracking
1	June 3, 2013		Revised
1	August 29, 2014	Standards Information Staff	Updated template
2	January 18, 2017	Standards Information Staff	Revised
2	June 28, 2017	Standards Information Staff	Updated template
3	February 22, 2019	Standards Information Staff	Added instructions to submit via Help Desk
4	February 25, 2020	Standards Information Staff	Updated template footer

5	August 14, 2023	Standards Development Staff	Updated template as part of Standards Process Stakeholder Engagement Group
6	June 4, 2023	Standards Information Staff	Updated link to the NERC Reliability Principles

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

This is the initial draft of the proposed standard for a formal 20-day comment and ballot period.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	July 17, 2024
SAR posted for comment	July 18, 2024 – August 16, 2024

Anticipated Actions	Date
20-day formal comment period with ballot	October 17, 2024 – November 5, 2024
18-day formal or informal comment period with additional ballot	December 3, 2024 – December 20, 2024
15-day formal or informal comment period with additional ballot	January 29, 2025 – February 12, 2025
Board adoption	TBD

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components.

Previously Approved Terms

This section includes previously approved terms from EOP-012-1 and EOP-012-2. It is included to help with drafting and the posting of EOP-012-3.

Extreme Cold Weather Temperature – The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 01/01/2000 through the date the temperature is calculated.

Generator Cold Weather Critical Component – Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

Fixed Fuel Supply Component – Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

A. Introduction

1. **Title:** **Extreme Cold Weather Preparedness and Operations**

2. **Number:** EOP-012-3

3. **Purpose:** To address the effects of operating in extreme cold weather by ensuring each Generator Owner has developed and implemented plan(s) to mitigate the reliability impacts of extreme cold weather on its applicable generating units.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Generator Owner

   4.1.2. Generator Operator

   4.2. Facilities:

   4.2.1. Bulk Electric System (BES) generating units. For purposes of this standard, the term "generating unit" subject to these requirements refers to the following Bulk Electric System (BES) resources:

   4.2.1.1. A Bulk Electric System generating resource identified in the BES definition, inclusion I2 and I4; or

   4.2.1.2. A Blackstart Resource, identified in the BES definition, inclusion I3.

5. **Effective Date:** See Implementation Plan for Project 2024-03.

B. Requirements and Measures

R1. At least once every five calendar years, each Generator Owner shall, for each of its applicable generating unit(s): [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]

1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable unit(s) and identify the calculation date and source of temperature data; and

1.1.1. If the re-calculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation. If new corrective actions are needed to provide the required operational capability under Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) months of the recalculation.

1.2. Identify generating unit(s) cold weather data, to include:

1.2.1. Generating unit(s) operating limitations in cold weather to include:

1.2.1.1. Capability and availability;

1.2.1.2. Fuel supply and inventory concerns;

1.2.1.3. Start-up issues;

1.2.1.4. Fuel switching capabilities; and

1.2.1.5. Environmental constraints.

1.2.2. Generating unit(s) minimum:

- Design temperature, and if available, the concurrent wind speed and precipitation;
- Historical operating temperature at least one hour in duration, and if available, the concurrent wind speed and precipitation; or
- Current cold weather performance temperature determined by an engineering analysis, which includes the concurrent wind speed and precipitation.

M1. Each Generator Owner will have evidence documenting its Extreme Cold Weather Temperature calculation and design information, operating data, or engineering analysis that supports its generating unit minimum temperature.

R2. Applicable to generating units which begin commercial operation[1] on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees

[1] Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing.

Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[2] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

2.1 For generating units for which the Generator Owner first contractually committed to design criteria[3] relevant to this Requirement before February 16, 2023[4]:

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or

- Have a Corrective Action Plan(s) in place (to include any applicable Generator Cold Weather Constraint(s) upon beginning commercial operation, to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours.

2.2 For generating units for which the Generator Owner first contractually committed to design criteria[5] relevant to this Requirement on or after February 16, 2023[6:]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or

- Document in a declaration, with justification, as applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

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[2] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[3] Such commitments would be demonstrated by signed contractual commitments, emailed correspondence agreeing to thermal design criteria, or other similar documented evidence.

[4] Or the date the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction.

[5] Such commitments would be demonstrated by signed contractual commitments, emailed correspondence agreeing to thermal design criteria, or other similar documented evidence.

[6] Or the date the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction.

M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its unit(s) in accordance with R2, or it has developed a Corrective Action Plan or declared a Generator Cold Weather Constraint for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature under Requirement R1 Part 1.2.2 which is equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, Corrective Action Plan(s) (if applicable), and Generator Cold Weather Constraints (if applicable).

R3. Applicable to generating unit(s) in commercial operation prior to October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[7] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature; or
- Develop a Corrective Action Plan to add new or modify existing freeze protection measures to provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature.

M3. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its unit(s) in accordance with R3, or it has developed a Corrective Action Plan for the identified issues. Acceptable evidence may include, but is not limited to, the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature per Part 1.2.2 which is equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and Corrective Action Plan(s).

R4. Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness plan(s) shall include the following, at a minimum: *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

[7] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

4.1. The lowest calculated Extreme Cold Weather Temperature for each unit, as determined in Requirement R1;[8]

4.2. The generating unit cold weather data, as determined in Requirement R1.2;

4.3. Documentation identifying Generator Cold Weather Critical Components;

4.4. Documentation of freeze protection measures implemented on Generator Cold Weather Critical Components which includes measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain); and

4.5. Annual inspection and maintenance of generating unit(s) freeze protection measures implemented on Generator Cold Weather Critical Components.

M4. Each Generator Owner will have evidence documenting that its cold weather preparedness plan(s) was implemented and maintained in accordance with Requirement R4. Examples of documentation to demonstrate a cold weather preparedness plan may include existing operating procedures, plans, checklists, or processes. Examples of documentation, to demonstrate inspections and maintenance have been completed, may include, but are not limited to, completed work order(s) from the Generator Owner's work management system and/or freeze protection checklists identifying the measures inspected and maintained for the Generator Cold Weather Critical Components.

R5. Each Generator Owner in conjunction with its Generator Operator shall identify the entity responsible for providing the generating unit-specific training, and that identified entity shall provide annual training to its maintenance or operations personnel responsible for implementing the cold weather preparedness plan(s) developed pursuant to Requirement R4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*

M5. Each Generator Operator or Generator Owner will have documented evidence that the applicable personnel completed annual training of the Generator Owner's cold weather preparedness plan(s). This evidence may include, but is not limited to, documents such as personnel training records, training materials, date of training, agendas or learning objectives, attendance at pre-work briefings, review of work order tasks, tailboards, attendance logs for classroom training, and completion records for computer-based training in fulfillment of Requirement R5.

R6. Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at

[8] Generator Owners shall include the lowest calculated Extreme Cold Weather Temperature for the unit, even where subsequent periodic re-calculations under Requirement R1 Part 1.1 cause an increase in the Extreme Cold Weather Temperature.

or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[9] develop and implement a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed before the first day of July, but not more than 150 days after the Generator Cold Weather Reliability Event. The Generator Owner shall: *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

6.1. Ensure the Corrective Action Plan contains at a minimum:

6.1.1. A summary of the identified cause(s) for the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;

6.1.2. A list of actions to add new or remedy issues with existing freeze protection measures;

6.1.3. An identification of operating limitations or impacts to the cold weather preparedness plan that would apply until execution of the corrective action(s) identified in the Corrective Action Plan;

6.1.4. A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required;

6.1.5. A timetable specifying that implementation of the Corrective Action Plan shall be completed prior to the first day of December following the Generator Cold Weather Reliability Event[10]; and

6.1.6. A review of applicability to similar equipment freeze protection measures at generating units owned by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of the Generator Cold Weather Reliability Event;

6.2. Update the Corrective Action Plan action(s) and timetable(s), with justification, and submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA)[11] for approval where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 6.1. The submitted Corrective Action Plan extension request shall include the following;

[9] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[10] For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year.

[11] Extension requests will be received and evaluated in accordance with the NERC process. The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.

6.2.1. Circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

6.2.2. Revisions to the selected actions in Part 6.1, if any, including utilization of Operating Procedures, if applicable; and

6.2.3. Updated timetable for implementing the selected actions in Part 6.1.

6.3. Document in a declaration, with justification, any Generator Cold Weather Constraint in accordance with Requirement R8, if applicable, that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.

M6. Each Generator Owner will have documented evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event at an applicable unit in accordance with Requirement R6. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), Generator Cold Weather Constraint(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, and updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan.

R7. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, or R3 shall, as applicable: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

7.1. Include a timetable for implementing the selected corrective action(s) that shall:

7.1.1. List the action(s) which remedy(ies) issues with existing freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan, regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures;

7.1.2. List the action(s) which require(s) new freeze protection measures, if any, to be completed within 48 calendar months of completing development of the Corrective Action Plan; and

7.1.3. Describe the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures.

7.2. Complete all actions described in the Corrective Action Plan in accordance with the specified timetables in Part 7.1.

7.3. Submit a Corrective Action Plan extension request, for the approval of the CEA[12], where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 7.1. The submitted request shall:

7.3.1 Explain the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.3.2 Include, as applicable, revisions to the selected actions in Part 7.1, including utilization of Operating Procedures; and

7.3.3 Include an updated timetable for implementing the selected actions in Part 7.1.

7.4. Document in a declaration, with justification, any Generator Cold Weather Constraint in accordance with Requirement R8 that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.

M7. Each Generator Owner shall have dated evidence that demonstrates it implemented each Corrective Action Plan, including updating actions or timetables, or has explained in a declaration why corrective actions are not being implemented in accordance with Requirement R7. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the implementation of each Corrective Action Plan and the completion of actions for each Corrective Action Plan including revision history of each Corrective Action Plan, documentation from the Compliance Enforcement Authority indicating that a Corrective Action Plan extension request was granted and, if applicable, justification to support any changes to corrective action(s) identified in the Corrective Action Plan or any Corrective Action Plan extension requests when timetables exceeding the timelines in Requirement R7 Part 7.1. For each Corrective Action Plan applying to multiple generating units, the timetable shall reflect implementation at each unit addressed in the Corrective Action Plan. Evidence may also include work management program records, work orders, and maintenance records. Any declaration shall contain dated documentation to support constraints identified by the Generator Owner.

R8. Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

8.1. Submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 days of determining that the Generator Cold Weather Constraint is applicable. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial

[12] Extension requests will be received and evaluated in accordance with the NERC process. The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.

operation, submit the Generator Cold Weather Constraint declaration(s) no later than 15 days after commercial operation;

8.2. Review any Generator Cold Weather Constraint declaration validated by the CEA every 24 calendar months to determine if it remains valid under Attachment 1;

8.3 Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable; and

8.4 If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with the timetables in Requirement R6 Part 6.1 or Requirement R7 Part 7.1, to begin from the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid.

M8. Each Generator Owner shall have dated evidence that demonstrates it performed the actions in accordance with Requirement R8. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the performance of the review and update to the operating limitations, as needed.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" (CEA) means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation.

- The Generator Owner shall retain data or evidence to support its current Extreme Cold Weather Temperature calculation and generating unit cold weather data, plus each calculation or revision since the last audit, for Requirement R1 and Measure M1.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R2 or R3 is complete, whichever timeframe is greater, for Requirements R2 and R3 and Measures M2 and M3. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall retain the current cold weather preparedness plan(s), as evidence of review or revision history, plus each version issued since the last audit and evidence of compliance since the last audit for Requirement R4 and Measure M4.
- The Generator Owner or Generator Operator shall keep data or evidence to show compliance for three years for Requirement R5 and Measure M5.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R6 is complete, whichever timeframe is greater, for Requirement R6 and Measure M6.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan is complete, whichever time frame is greater, for Requirement R7 and Measure M7. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.

- The Generator Owner shall maintain data or evidence to support its current Generator Cold Weather Constraint declaration, plus each revision since the last audit, for Requirement R8 and Measure M8.

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Generator Owner did not calculate the Extreme Cold Weather Temperature and identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature and identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature and identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature and identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.
R2.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not have a Corrective Action Plan or a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not have a Corrective Action Plan or a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not have a Corrective Action Plan or a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not have a Corrective Action Plan or a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.
R3.	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	measure(s) meeting the criteria in Requirement R3 for 5% or less of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for 5% or less of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 20% of its applicable units.
R4.	The Generator Owner created a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable Parts within Requirement R4.	The Generator Owner had and maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.
R5.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	described in Requirement R5 to the greater of: • one applicable personnel at a single generating unit; or • 5% or less of its total applicable personnel.	described in Requirement R5 to the greater of: • two applicable personnel at a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	described in Requirement R5 to the greater of: • three applicable personnel at a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	described in Requirement R5 to the greater of: • four or more applicable personnel at a single generating unit; or • more than 15% of its total applicable personnel.
R6.	The Generator Owner developed and implemented a Corrective Action Plan for a Generator Cold Weather Reliability Event, but it was not developed in accordance with the timeline specified in Requirement R6.	The Generator Owner developed and implemented a Corrective Action Plan for a Generator Cold Weather Reliability Event, but it failed to contain one of the elements in Requirement R6, Part 6.1.	The Generator Owner developed and implemented a Corrective Action Plan for a Generator Cold Weather Reliability Event, but it failed to contain two of the elements in Requirement R6, Part 6.1. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.2 (if applicable), but it did not include one of the elements in Requirement R6, Part 6.2.	The Generator Owner developed a Corrective Action Plan for a Generator Cold Weather Reliability Event, but failed to implement it. OR The Generator Owner developed and implemented a Corrective Action Plan, but failed to contain three or more of the elements in Requirement R6, Part 6.1 . OR The Generator Owner did not submit a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.2 (if applicable).

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.2 (if applicable), but it did not include two or more of the elements in Requirement R6, Part 6.2. OR The Generator Owner did not document in a declaration any Generator Cold Weather Constraint(s), as required by Requirement R6, Part 6.3.
R7.	The Generator Owner completed selected corrective action(s) in accordance with the 24 and 48 calendar month timelines provided in Requirement R7, Part 7.1 (Part 7.2), but failed to include in its Corrective Action Plan a timetable listing such action(s) in accordance with	The Generator Owner included a timetable for implementing the selected corrective action(s) in its Corrective Action Plan in accordance with Requirement R7, Part 7.1 and completed actions in accordance with that timetable (Part 7.2), but it failed to list the updates to the cold weather preparedness	The Generator Owner included in its Corrective Action Plan a timetable for implementing the selected corrective actions, completed actions in accordance with that timetable (Part 7.2), and submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.3 when the timetables for completion	The Generator Owner included in its Corrective Action Plan a timetable for implementing the selected corrective actions, completed actions in accordance with that timetable (Part 7.2), and submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.3 when the timetables for completion

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	Requirement R7, Parts 7.1.1-7.1.2.	plan as required in Requirement R7, Part 7.1.3.	were projected to exceed the timelines in Part 7.1, but its request did not include one of the elements in Requirement R7, Part 7.3.	were projected to exceed the timelines in Part 7.1, but its request did not include two or more of the elements in Requirement R7, Part 7.3. OR The Generator Owner included in its Corrective Action Plan a timetable for implementing the selected corrective actions, and completed actions in accordance with that timetable (Part 7.2), but failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable). OR The Generator Owner failed to complete corrective action(s) described in the Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) that preclude the

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.
R8.	The Generator Owner submitted a Generator Cold Weather Constraint in accordance with Requirement R8, Part 8.1, but did not do so within the specified timeframe.	The Generator Owner failed to comply with one of the elements in Requirement R8, Parts 8.2 through 8.4.	The Generator Owner failed to comply with two of the elements in Requirement R8, Parts 8.2 through 8.4.	The Generator Owner failed to comply with three of the elements in Requirement R8, Parts 8.2 through 8.4. OR The Generator Owner declared but failed to submit a Generator Cold Weather Constraint in accordance with Requirement R8, Part 8.1.

D. Regional Variances

None.

E. Associated Documents

Implementation Plan

Attachment 1

Generator Owners shall determine the applicability of a Generator Cold Weather Constraint declared under Requirements R2, R6, and R7 using the criteria as described below.

A Generator Cold Weather Constraint is any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the following criteria:

Pre-Approved Generator Cold Weather Constraints

The following are circumstances which, if present and confirmed as valid by the Compliance Enforcement Authority, will constitute Generator Cold Weather Constraints:

- Wind turbine towers that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1.
- Heat tracing or other de-icing technologies for wind turbine blades that are not available in the Generator Owner's location.
- Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities.
- Applying heat to remove accumulated frozen precipitation on solar panels.
- Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters.

Case-by-case Determinations of Generator Cold Weather Constraints

The following situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the Compliance Enforcement Authority will these circumstances comprise a valid Generator Cold Weather Constraint:

1. The application of a specific freeze protection measure will void an equipment warranty.
2. The application of a specific freeze protection measure is precluded by technical or physical limitations. For example:
    a. Installing wind breaks around a cooling tower or air-cooled heat exchanger which requires free airflow for its functionality;
    b. Applying freeze control measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system.
    c. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.
3. The application of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:

a. The application of freeze protection measures would result in the premature retirement of an existing dispatchable generating unit with no acceptable replacement currently available;
b. The freeze protection measures would be applied to a generating unit that has a previously published retirement date within three years of the Generator Cold Weather Constraint declaration;
c. The application of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit(s);
d. The application of freeze protection measures would reduce the generating unit's ability to provide Real Power or Reactive Power by more than three percent; or
e. The application of freeze protection measures would reduce the summer net dependable capacity[1] of the generating unit by more than three percent.
f. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.

4. The application of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.
5. Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Generator Cold Weather Critical Components.

When submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply. An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

[1] "net dependable capacity" refers to the definition used for reporting to the NERC in Generating Availability Data System (GADS) appropriate for the generation type.

Version History

Version	Date	Action	Change Tracking
1	October 1, 2022	Drafted by Project 2021-07	New
2	February 16, 2023	Revisions drafted by Project 2021-07 due to FERC Order and inquiry Recommendations.	Revisions
2	February 15,2024	Board Adopted	
2	June 27, 2024	FERC Approved	
3	October 17, 2024	Drafted by Project 2024-03	As directed by the June 2024 FERC Order

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

This is the initial draft of the proposed standard for a formal 20-day comment and ballot period.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	July 17, 2024
SAR posted for comment	July 18, 2024 – August 16, 2024

Anticipated Actions	Date
20-day formal comment period with ballot	October 17, 2024 – November 5, 2024
18-day formal or informal comment period with additional ballot	December 3, 2024 – December 20, 2024
15-day formal or informal comment period with additional ballot	January 29, 2025 – February 12, 2025
Board adoption	TBD

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. ~~using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions.~~

~~Criteria used to determine a constraint include practices, methods, or technologies which, given the exercise of reasonable judgment in light of the facts known at the time the decision to declare the constraint was made:~~

~~Were not broadly implemented at generating units for comparable unit types in regions that experience similar winter climate conditions to provide reasonable assurance of efficacy;~~

~~Could not have been expected to accomplish the desired result; or~~

~~Could not have been implemented at a reasonable cost consistent with good business practices, reliability, or safety. A cost may be deemed "unreasonable" when implementation of selected freeze protection measure(s) are uneconomical to the extent that they would require prohibitively expensive modifications or significant expenditures on equipment with minimal remaining life.~~

Previously Approved Terms

This section includes previously approved terms from EOP-012-1 and EOP-012-2. It is included to help with drafting and the posting of EOP-012-3.

Extreme Cold Weather Temperature – The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 1/1/2000 through the date the temperature is calculated.

Generator Cold Weather Critical Component – Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that

regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

Fixed Fuel Supply Component – Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

A. Introduction

1. **Title:** **Extreme Cold Weather Preparedness and Operations**

2. **Number:** EOP-012-32

3. **Purpose:** To address the effects of operating in extreme cold weather by ensuring each Generator Owner has developed and implemented plan(s) to mitigate the reliability impacts of extreme cold weather on its applicable generating units.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Generator Owner

   4.1.2. Generator Operator

   4.2. Facilities:

   4.2.1. Bulk Electric System (BES) generating units. For purposes of this standard, the term "generating unit" subject to these requirements refers to the following Bulk Electric System (BES) resources:

   4.2.1.1. A Bulk Electric System generating resource identified in the BES definition, inclusion I2 and I4; or

   4.2.1.2. A Blackstart Resource, identified in the BES definition, inclusion I3.

5. **Effective Date:** See Implementation Plan for Project 20241-037 Phase 2.

B. Requirements and Measures

R1. At least once every five calendar years, each Generator Owner shall, for each of its applicable generating unit(s): [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]

1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable unit(s) and identify the calculation date and source of temperature data; and

1.1.1. If the re-calculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation. If new corrective actions are needed to provide the required operational capability under Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) months of the recalculation.

1.2. Identify generating unit(s) cold weather data, to include:

1.2.1. Generating unit(s) operating limitations in cold weather to include:

1.2.1.1. Capability and availability;

1.2.1.2. Fuel supply and inventory concerns;

1.2.1.3. Start-up issues;

1.2.1.4. Fuel switching capabilities; and

1.2.1.5. Environmental constraints.

1.2.2. Generating unit(s) minimum:

- Design temperature, and if available, the concurrent wind speed and precipitation;
- Historical operating temperature at least one hour in duration, and if available, the concurrent wind speed and precipitation; or
- Current cold weather performance temperature determined by an engineering analysis, which includes the concurrent wind speed and precipitation.

M1. Each Generator Owner will have evidence documenting its Extreme Cold Weather Temperature calculation and design information, operating data, or engineering analysis that supports its generating unit minimum temperature.

R2. Applicable to generating units ~~with a~~which begin commercial operation[1] ~~date~~ on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit

[1] Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing.

(zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[2] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

2.1 For generating units for which the Generator Owner first contractually committed to design criteria[3] relevant to this Requirement before February 16, 2023[4]:

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or

- ~~Develop~~ Have a Corrective Action Plan(s) in place (to include any applicable Generator Cold Weather Constraint(s) upon beginning commercial operations~~.~~, to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours.

2.2 For generating units for which the Generator Owner first contractually committed to design criteria[5] relevant to this Requirement on or after February 16, 2023[6]:

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or~~.~~

[2] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[3] Such commitments would be demonstrated by signed contractual commitments, emailed correspondence agreeing to thermal design criteria, or other similar documented evidence.

[4] Or the date the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction.

[5] Such commitments would be demonstrated by signed contractual commitments, emailed correspondence agreeing to thermal design criteria, or other similar documented evidence.

[6] Or the date the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction.

- Document in a declaration, with justification, as applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its unit(s) in accordance with R2, or it has developed a Corrective Action Plan or declared a Generator Cold Weather Constraint for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature under Requirement R1 Part 1.2.2 which is equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, ~~and~~ Corrective Action Plan(s) (if applicable), and Generator Cold Weather Constraints (if applicable).

R3. Applicable to generating unit(s) in commercial operation prior to October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[7] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature; or
- Develop a Corrective Action Plan to add new or modify existing freeze protection measures to provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature.

M3. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its unit(s) in accordance with R3, or it has developed a Corrective Action Plan for the identified issues. Acceptable evidence may include, but is not limited to, the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature per Part 1.2.2 which is equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and Corrective Action Plan(s).

R4. Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness plan(s)

[7] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

shall include the following, at a minimum: *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. The lowest calculated Extreme Cold Weather Temperature for each unit, as determined in Requirement R1;[8]

4.2. The generating unit cold weather data, as determined in Requirement R1.2;

4.3. Documentation identifying Generator Cold Weather Critical Components;

4.4. Documentation of freeze protection measures implemented on Generator Cold Weather Critical Components which includes measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain); and

4.5. Annual inspection and maintenance of generating unit(s) freeze protection measures implemented on Generator Cold Weather Critical Components.

M4. Each Generator Owner will have evidence documenting that its cold weather preparedness plan(s) was implemented and maintained in accordance with Requirement R4. Examples of documentation to demonstrate a cold weather preparedness plan may include existing operating procedures, plans, checklists, or processes. Examples of documentation to demonstrate inspections and maintenance have been completed may include, but are not limited to, completed work order(s) from the Generator Owner's work management system and/or freeze protection checklists identifying the measures inspected and maintained for the Generator Cold Weather Critical Components.

R5. Each Generator Owner in conjunction with its Generator Operator shall identify the entity responsible for providing the generating unit-specific training, and that identified entity shall provide annual training to its maintenance or operations personnel responsible for implementing the cold weather preparedness plan(s) developed pursuant to Requirement R4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*

M5. Each Generator Operator or Generator Owner will have documented evidence that the applicable personnel completed annual training of the Generator Owner's cold weather preparedness plan(s). This evidence may include, but is not limited to, documents such as personnel training records, training materials, date of training, agendas or learning objectives, attendance at pre-work briefings, review of work order tasks, tailboards, attendance logs for classroom training, and completion records for computer-based training in fulfillment of Requirement R5.

[8] Generator Owners shall include the lowest calculated Extreme Cold Weather Temperature for the unit, even where subsequent periodic re-calculations under Requirement R1 Part 1.1 cause an increase in the Extreme Cold Weather Temperature.

R6. Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[9] develop and implement a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed ~~within 150 days or by July 1, whichever is earlier, and contain at a minimum:~~ before the first day of July, but not more than 150 days after the Generator Cold Weather Reliability Event. The Generator Owner shall: *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

6.1. Ensure the Corrective Action Plan contains at a minimum:

6.1.1. A summary of the identified cause(s) for the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;

6.1.2. A list of actions to add new or remedy issues with existing freeze protection measures;

~~**6.2** A review of applicability to similar equipment at generating units owned by the Generator Owner; and~~

6.1.3. An identification of operating limitations or impacts to the cold weather preparedness plan that would apply until execution of the corrective action(s) identified in the Corrective Action Plan~~.~~;

6.1.4. A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required;

6.1.5. A timetable specifying that implementation of the Corrective Action Plan shall be completed prior to the first day of December following the Generator Cold Weather Reliability Event[10]; and

6.1.6. A review of applicability to similar equipment freeze protection measures at generating units owned by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of the Generator Cold Weather Reliability Event;

[9] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[10] For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year.

6.2. Update the Corrective Action Plan action(s) and timetable(s), with justification, and submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA)[11] for approval where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 6.1. The submitted Corrective Action Plan extension request shall include the following;

6.2.1. Circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

6.2.2. Revisions to the selected actions in Part 6.1, if any, including utilization of Operating Procedures, if applicable; and

6.2.3. Updated timetable for implementing the selected actions in Part 6.1.

6.3. Document in a declaration, with justification, any Generator Cold Weather Constraint in accordance with Requirement R8, if applicable, -that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.

M6. Each Generator Owner will have documented evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event at an applicable unit in accordance with Requirement R6. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), Generator Cold Weather Constraint(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, and updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan.

R7. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, or R3~~, or R6,~~ shall, as applicable: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

7.1. Include a timetable for implementing the selected corrective action(s) that shall:

7.1.1. List the action(s) which remedy~~address~~(ies) issues with existing ~~equipment or~~ freeze- protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan, regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures;

[11] Extension requests will be received and evaluated in accordance with the NERC process. The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.

7.1.2. List the action(s) which require(s) new ~~equipment or~~ freeze protection measures, if any, to be completed within 48 calendar months of completing development of the Corrective Action Plan; and

7.1.3. ~~List~~ Describe the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures.~~;~~

7.2. ~~Implement~~ Complete all actions described in the Corrective Action Plan in accordance with the specified timetables in ~~Requirement R7~~ Part 7.1;

7.3. ~~Update the Corrective Action Plan action(s) and timetable(s),~~ Submit a Corrective Action Plan extension request, for the approval of the CEA[12], where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 7.1. The submitted request shall:~~with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and~~

7.3.1 Explain the ~~C~~circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.3.2 Include, as applicable, revisions to the selected actions in Part 7.1, including utilization of Operating Procedures; and

7.3.3 Include an updated timetable for implementing the selected actions in Part 7.1.

7.4. Document in a declaration, with justification, any Generator Cold Weather Constraint in accordance with Requirement R8 that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.

M7. Each Generator Owner shall have dated evidence that demonstrates it implemented each Corrective Action Plan, including updating actions or timetables, or has explained in a declaration why corrective actions are not being implemented in accordance with Requirement ~~R8~~R7. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the implementation of each Corrective Action Plan and the completion of actions for each Corrective Action Plan including revision history of each Corrective Action Plan, documentation from the Compliance Enforcement Authority indicating that a Corrective Action Plan extension request was granted and, if applicable, justification to support any changes to corrective action(s) identified in the Corrective Action Plan or any Corrective Action Plan extension requests when timetables exceeding the timelines in Requirement R7 Part 7.1. For each Corrective Action Plan

[12] Extension requests will be received and evaluated in accordance with the NERC process. The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.

applying to multiple generating units, the timetable shall reflect implementation at each unit addressed in the Corrective Action Plan. Evidence may also include work management program records, work orders, and maintenance records. Any declaration shall contain dated documentation to support constraints identified by the Generator Owner.

R8. Each Generator Owner that ~~creates~~ declares a Generator Cold Weather Constraint in accordance with Attachment 1 ~~declaration~~ shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

8.1. Submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 days of determining that the Generator Cold Weather Constraint is applicable. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit the Generator Cold Weather Constraint declaration(s) no later than 15 days after commercial operation;

~~Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and~~

8.2. Review any Generator Cold Weather Constraint declaration validated by the CEA every 24 calendar months to determine if it remains valid under Attachment 1;

8.3 Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable; and

8.4 If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with the timetables in Requirement R6 Part 6.1 or Requirement R7 Part 7.1, to begin from the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid.

M8. Each Generator Owner shall have dated evidence that demonstrates it performed the actions in accordance with Requirement R8~~the review and updated operating limitations as needed~~. Acceptable evidence may include, but is not limited to the following dated documentation (electronic or hardcopy format): records that document the performance of the review and update to the operating limitations, as needed.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" (CEA) means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation.

- The Generator Owner shall retain data or evidence to support its current Extreme Cold Weather Temperature calculation and generating unit cold weather data, plus each calculation or revision since the last audit, for Requirement R1 and Measure M1.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R2 or R3 is complete, whichever timeframe is greater, for Requirements R2 and R3 and Measures M2 and M3. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall retain the current cold weather preparedness plan(s), as evidence of review or revision history, plus each version issued since the last audit and evidence of compliance since the last audit for Requirement R4 and Measure M4.
- The Generator Owner or Generator Operator shall keep data or evidence to show compliance for three years for Requirement R5 and Measure M5.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R6 is complete, whichever timeframe is greater, for Requirement R6 and Measure M6.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan is complete, whichever time frame is greater, for Requirement R7 and Measure M7. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.

- The Generator Owner shall maintain data or evidence to support its current Generator Cold Weather Constraint declaration, plus each revision since the last audit, for Requirement R8 and Measure M8.

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Generator Owner did not calculate the Extreme Cold Weather Temperature and identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature and identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature and identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature and identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.
R2.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not ~~develop~~ have a Corrective Action Plan or a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not ~~develop~~ have a Corrective Action Plan or a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not ~~develop~~ have a Corrective Action Plan or a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not ~~develop~~ have a Corrective Action Plan or a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.
R3.	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	measure(s) meeting the criteria in Requirement R3 for 5% or less of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for 5% or less of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 20% of its applicable units.
R4.	The Generator Owner ~~implemented~~ created a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable Parts within Requirement R4.	The Generator Owner had and maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.
R5.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	described in Requirement R5 to the greater of: • one applicable personnel at a single generating unit; or • 5% or less of its total applicable personnel.	described in Requirement R5 to the greater of: • two applicable personnel at a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	described in Requirement R5 to the greater of: • three applicable personnel at a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	described in Requirement R5 to the greater of: • four or more applicable personnel at a single generating unit; or • more than 15% of its total applicable personnel.
R6.	The Generator Owner developed and implemented a Corrective Action Plan for a Generator Cold Weather Reliability Event, but it was not developed in accordance with the timeline not within 150 days or by July 1 as required specified in Requirement R6.	The Generator Owner developed and implemented a 's Corrective Action Plan for a Generator Cold Weather Reliability Event, but it failed to comply withcontain one of the elements in Requirement R6, Parts 6.1 through 6.3.	The Generator Owner developed and implemented a 's Corrective Action Plan for a Generator Cold Weather Reliability Event, but it failed to comply withcontain two of the elements in Requirement R6, Parts 6.1 through 6.3. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.2 (if applicable), but it did not include one of the elements in Requirement R6, Part 6.2.	The Generator Owner developed a Corrective Action Plan for a Generator Cold Weather Reliability Event, but failed to implement it. OR The Generator Owner developed and implemented a's Corrective Action Plan, but failed to comply withcontain three or more of the elements in Requirement R6, Parts 6.1 through 6.3. OR The Generator Owner did not submit a Corrective Action Plan extension request in

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				accordance with Requirement R6, Part 6.2 (if applicable). OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.2 (if applicable), but it did not include two or more of the elements in Requirement R6, Part 6.2. OR The Generator Owner did not document in a declaration any Generator Cold Weather Constraint(s), ~~develop a Corrective Action Plan,~~ as required by Requirement R6, Part 6.3.
R7.	~~The Generator Owner implemented a Corrective Action Plan, but failed to update the Corrective Action Plan when corrective action(s) changed in accordance with Requirement R7.~~The	~~The Generator Owner implemented a Corrective Action Plan, but failed to include a timetable for implementing the selected corrective actions meeting the criteria of Requirement R7~~	The Generator Owner included in its~~implemented a~~ Corrective Action Plan a timetable for implementing the selected corrective actions, completed actions in accordance with that timetable (Part 7.2), and	The Generator Owner included in its~~failed to implement a~~ Corrective Action Plan a timetable for implementing the selected corrective actions, completed actions in accordance with that

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	Generator Owner completed selected corrective action(s) in accordance with the 24 and 48 calendar month timelines provided in Requirement R7, Part 7.1 (Part 7.2), but failed to include in its Corrective Action Plan a timetable listing such action(s) in accordance with Requirement R7, Parts 7.1.1-7.1.2.	~~Part 7.1.~~The Generator Owner included a timetable for implementing the selected corrective action(s) in its Corrective Action Plan in accordance with Requirement R7, Part 7.1 and completed actions in accordance with that timetable (Part 7.2), but it failed to list the updates to the cold weather preparedness plan as required in Requirement R7, Part 7.1.3.	submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.3 when the timetables for completion were projected to exceed the timelines in Part 7.1, but its request did not include one of the elements in Requirement R7, Part 7.3.~~, but failed to implement the Corrective Action Plan within the specified timetable or failed to update the Corrective Action Plan, with justification, when timetable(s) exceeded the timelines in Requirement R7 Part 7.1.~~	timetable (Part 7.2), and submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.3 when the timetables for completion were projected to exceed the timelines in Part 7.1, but its request did not include two or more of the elements in Requirement R7, Part 7.3.~~or failed to document in a declaration why corrective actions are not being implemented in accordance with Requirement R7.~~ OR The Generator Owner included in its Corrective Action Plan a timetable for implementing the selected corrective actions, and completed actions in accordance with that timetable (Part 7.2), but failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				timelines in Part 7.1 (if applicable). OR The Generator Owner failed to complete corrective action(s) described in the Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) that preclude the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.
R8.	~~N/A~~ The Generator Owner submitted a Generator Cold Weather Constraint in accordance with Requirement R8, Part 8.1, but did not do so within the specified timeframe.	~~N/A~~ The Generator Owner failed to comply with one of the elements in Requirement R8, Parts 8.2 through 8.4.	The Generator Owner failed to comply with ~~one~~ two of the elements in Requirement R8, Parts ~~8.1~~8.2 through ~~8.2~~8.4.	The Generator Owner failed to comply with three ~~all~~ of the elements in Requirement R8, Parts 8.2 through 8.4~~8.1 through 8.2~~. OR The Generator Owner declared but failed to submit a Generator Cold Weather Constraint in accordance with Requirement R8, Part 8.1.

D. Regional Variances

None.

E. Associated Documents

Implementation Plan

Attachment 1

Generator Owners shall determine the applicability of a Generator Cold Weather Constraint declared under Requirements R2, R6, and R7 using the criteria as described below.

A Generator Cold Weather Constraint is any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the following criteria:

Pre-Approved Generator Cold Weather Constraints

The following are circumstances which, if present and confirmed as valid by the Compliance Enforcement Authority, will constitute Generator Cold Weather Constraints:

- Wind turbine towers that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1.
- Heat tracing or other de-icing technologies for wind turbine blades that are not available in the Generator Owner's location.
- Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities.
- Applying heat to remove accumulated frozen precipitation on solar panels.
- Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters.

Case-by-case Determinations of Generator Cold Weather Constraints

The following ~~s~~situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the Compliance Enforcement Authority will these circumstances comprise a valid Generator Cold Weather Constraint:

1. The application of a specific freeze protection measure will void an equipment warranty.
2. The application of a specific freeze protection measure is precluded by technical or physical limitations. For example:
    a. Installing wind breaks around a cooling tower or air-cooled heat exchanger which requires free airflow for its functionality;
    b. Applying freeze control measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system.
    c. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.

3. The application of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:
    a. The application of freeze protection measures would result in the premature retirement of an existing dispatchable generating unit with no acceptable replacement currently available;
    b. The freeze protection measures would be applied to a generating unit that has a previously published retirement date within three years of the Generator Cold Weather Cconstraint declaration;
    c. The application of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit(s);
    d. The application of freeze protection measures would reduce the generating unit's ability to provide Real Power or Reactive Power by more than three percent; or
    e. The application of freeze protection measures would reduce the summer net dependable capacity[1] of the generating unit by more than three percent.
    f. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.

4. The application of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.

5. Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Generator Cold Weather Critical Components.

When submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply. An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

[1] "net dependable capacity" refers to the definition used for reporting to the NERC in Generating Availability Data System (GADS) appropriate for the generation type.

Version History

Version	Date	Action	Change Tracking
1	October 1, 20224	Drafted by Project 2021-07	New
2	February 16, 2023	Revisions drafted by Project 2021-07 due to FERC Order and inquiry Recommendations.	Revisions
2	February 15,2024	Board Adopted	
2	June 27, 2024	FERC Approved	
3	October 17, 2024	Drafted by Project 2024-03	As directed by the June 2024 FERC Order

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Implementation Plan

Project 2024-03 Revisions to EOP-012-2
Reliability Standard EOP-012-3

Applicable Standard(s)

- EOP-012-3 Extreme Cold Weather Preparedness and Operations

Requested Retirement(s)

- EOP-012-2 Extreme Cold Weather Preparedness and Operations

Applicable Entities

- Generator Owner
- Generator Operator

Background

The purpose of this project is to address the directives identified by FERC in its June 27, 2024 order approving Reliability Standard EOP-012-2 and directing further modifications. *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61,204 (2024) (June 2024 Order), available here. In that order, FERC found that further improvements needed to address ambiguous language and other reliability gaps/implementation issues in the standard and related definitions to fully address issues first raised in the Commission's February 2023 Order approving EOP-012-1. FERC directed that NERC submit the modifications within nine months of the date of the order, or by March 27, 2025.

Project 2024-03

Project 2024-03 is a project to address FERC directives in the June 2024 Order approving EOP-012-2.

Proposed Reliability Standard EOP-012-3 revises the EOP-012-2 standard by providing and clarifying further improvements needed to be made to address ambiguous language and address other reliability gaps/implementation issues in the standard and related definitions to fully address issues first raised in the Commission's February 2023 Order approving EOP-012-1. *See N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094, PP 3-11 (2023) (February 2023 Order); *reh'g denied*, 183 FERC ¶ 62,034, *order on reh'g*, 183 FERC ¶ 61,222 (2023). In the June 2024 Order approving EOP-012-2, FERC directed that NERC submit the directed modifications within nine months of the date of the order, or by March 27, 2025.

Proposed EOP-012-3 Requirement R1 is an existing EOP-012-2 requirement that consolidated and clarified requirements for each Generator Owner to calculate the Extreme Cold Weather Temperature for its generating unit location(s) and identify generating unit cold weather data, and

to review these calculations and data every five years. Proposed EOP-012-3 Requirement R4 and R5 continue the current requirements under EOP-012-2 (with minimal clarifications in Requirement R4), that all Generator Owners develop cold weather preparedness plans and that all Generator Owners or Generator Operators (as appropriate) conduct annual training on those plans. Proposed EOP-012-3 clarifies which generating unit(s) are subject to the winter operations capability requirements of the standard (Requirements R2 and R3). Proposed EOP-012-3 Requirement R6 provides clarification regarding responses to a Generator Cold Weather Reliability Event that may require Corrective Action Plans (CAP). Proposed EOP-012-3 Requirement R7 specifies timelines for the completion of Corrective Action Plans, consistent with the February 2023 Order and FERC directives in the June 2024 FERC Order. The drafting team crafted language to meet the concern of Generator Owners regarding timelines for units under consideration or development. The language reflects FERC's concern regarding applicability of Corrective Action Plans to the correct Generator Owner. Proposed EOP-012-3 Requirement R8 requires Generator Owners to review declarations at least every 24 calendar months, or as needed, when a change of status occurs and ensures operating limitations caused by the constraints are clearly identified. The revised *Glossary* term for Generator Cold Weather Constraint, and new Attachment 1, provides clarity to the circumstances under which Generator Owners may declare Generator Cold Weather Constraints and thus further clarifies the requirements of the standard.

For additional information on the FERC Order directives addressed in proposed Reliability Standard EOP-012-3, see the Consideration of Directives, available on the Project 2024-03 project page.

General Considerations

This implementation plan reflects past consideration that entities needed time to develop, implement, and maintain cold weather plans, identify Generator Cold Weather Critical Components, and identify freeze protection measures. The implementation plan also considers the FERC directives regarding the need for an accelerated effective date of directed changes and abbreviated implementation periods for generator winterization measures. FERC has repeatedly expressed an urgency in completing cold weather Reliability Standards and having them implemented in a timely manner to address the risks presented by cold weather events on the reliability of the Bulk-Power System. FERC noted the five core directives to NERC in the June 2024 Order are not new issues, but rather targeted modifications necessary to fully address issues identified in FERC's prior February 2023 Order. *See* June 2024 Order at P 30.

In consideration of these factors, and to ensure entities have sufficient notice of their revised obligations under Reliability Standard EOP-012-3, the proposed implementation plan provides that the standard shall become effective on the later of October 1, 2025, which is the date Reliability Standard EOP-012-2 will be fully enforceable in the United States, or three months following regulatory approval.

The drafting team determined that later phased-in compliance dates were not necessary for the revised requirements in EOP-012-3, as the practical impact of implementing the proposed changes, in light of the regulatory history described above, is not expected to be significant:

- For revised Requirement R2, units further into design or construction have separate requirements from those units in the early phases of design: the units further in the design/construction phase are allowed to develop Corrective Action Plans to meet the more rigorous requirements for new generating units, whereas units in the early stages of design are expected to meet the more rigorous requirements unless a Generator Cold Weather Constraint applies. Additional time is not needed to implement this change.
- For revised Requirement R6, relating to Generator Cold Weather Reliability Events, the language reflects the FERC directives regarding Corrective Action Plans, Corrective Action Plan extensions, and consideration of applicability of Corrective Action Plan corrective actions across a fleet for Generation Owners that had a generating unit(s) that experienced a Generator Cold Weather Reliability Event. Additional time to implement these changes is not needed, given the conditions in which a Corrective Action Plan may be needed for a Generator Cold Weather Reliability Event.
- For revised Requirement R7, the drafting team clarified the applicability of Corrective Action Plan requirements and implemented a Corrective Action Plan extension process similar to that found in Reliability Standard TPL-007-4 to address the June 2024 Order. Additional guidance is provided below.

Additional guidance is provided to aid in the orderly implementation of the standard as entities transition from compliance with Reliability Standard EOP-012-2 to Reliability Standard EOP-012-3.

Effective Date

The effective dates for the proposed Reliability Standards are provided below. Where the drafting team identified or recognized the need for a longer implementation period for compliance with a particular section of a proposed Reliability Standard (i.e., an entire Requirement or a portion thereof), the additional time for compliance with that section is specified below. The phased-in compliance date for those particular sections represents the date that entities must be compliant with that particular section of the Reliability Standard, even where the Reliability Standard goes into effect at an earlier date.

EOP-012-3 and Definitions

Where approval by an applicable governmental authority is required, the standard and associated definitions shall become effective on the later of: (1) October 1, 2025; or (2) the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.

Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

Effective Date and Phased-In Compliance Dates

Compliance Date for EOP-012-3 Requirement R1

Entities were required to become compliant with Requirement R1 by the effective date of EOP-012-2 in accordance with that implementation plan. Entities shall perform their first periodic review under Reliability Standard EOP-012-3 Requirement R1 by no more than 60 months after the effective date of **EOP-012-2**.

Compliance Date for EOP-012-3 Requirement R2 – New Generating Units

Entities shall become compliant with Requirement R2 no later than the commercial operations date for the applicable unit. Any Generator Cold Weather Constraint shall be submitted in accordance with the timeline provided in Requirement R8.

Compliance Date for EOP-012-3 Requirement R3 – New Generating Units

Entities beginning commercial operation after the effective date of EOP-012-3 shall become compliant with Requirement R3 no later than the commercial operations date for the applicable unit.

Compliance Date for EOP-012-3 Requirement R6

Entities shall comply with Requirement R6 within the timeframes listed within the requirement if a Generator Cold Weather Reliability Event has occurred.

Compliance Date for EOP-012-3 Requirement R7

Entities shall comply with Requirement R7 within the timeframes listed within the requirement if a Corrective Action Plan is required.

Compliance Date for EOP-012-3 Requirement R8

Each entity shall review all Generator Cold Weather Constraints previously declared under Reliability Standard EOP-012-2 for compliance with Reliability Standard EOP-012-3 Attachment 1 by the effective date. The entity shall submit any previously declared Generator Cold Weather Constraints no later than 45 days following the effective date of Reliability Standard EOP-012-3. Newly declared Generator Cold Weather Constraints shall be submitted in accordance with the timelines specified in Requirement R8.

Retirement Date of EOP-012-2

Reliability Standard EOP-012-2 shall be retired immediately prior to the effective date of Reliability Standard EOP-012-3 in the particular jurisdiction in which the revised standard is becoming effective.

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Technical Rationale for Reliability Standard EOP-012-3

October 2024

EOP-012-3 – Extreme Cold Weather Preparedness and Operations

Introduction

This document explains the technical rationale and justification for the proposed Reliability Standard EOP-012-3. It provides stakeholders and the ERO Enterprise with an understanding of the technology and technical requirements in the Reliability Standard. This Technical Rationale and Justification for EOP-012-3 is not a Reliability Standard and should not be considered mandatory and enforceable.

Background

From February 8 through February 20, 2021, extreme cold weather and precipitation caused large numbers of generating units to experience outages, derates or failures to start, resulting in energy and transmission emergencies (referred to as the "Event"). The total Event firm load shed was the largest controlled firm load shed event in U.S. history and was the third largest in quantity of outaged megawatts (MW) of load after the August 2003 Northeast blackout and the August 1996 West Coast blackout. The Event was most severe from February 15 through February 18, 2021, and it contributed to power outages affecting millions of electricity customers throughout the regions of ERCOT, SPP, and MISO South. Additionally, the February 2021 event is the fourth cold weather event in the past 10 years, which jeopardized BPS reliability. A joint inquiry was conducted to discover reliability-related findings and develop recommendations from Federal Energy Regulatory Commission (FERC), NERC, and Regional Entity staff. The FERC, NERC, and Regional Entity Staff Report into the February 2021 Cold Weather Outages[1] ("Joint Inquiry Report") was published on November 16, 2021.

Project 2021-07 was a two-phase project to address the 10 sub-recommendations in Key Recommendation 1 of the Joint Inquiry Report for new or enhanced NERC Reliability Standards. Reliability Standard EOP-012-1 was originally developed to address Recommendations 1d, 1e, and 1f of the Joint Inquiry Report through new and enhanced requirements for generator preparedness for extreme cold weather conditions. Reliability Standard EOP-012-2 was revised to address Key Recommendations 1a, 1b, and 1c as well as the FERC directives in the February 2023 Order approving the Phase 1 standards EOP-011-3 and EOP-012-1.[2]

1 The February 2021 Cold Weather Outages in Texas and the South Central United States | FERC, NERC and Regional Entity Staff Report | Federal Energy Regulatory Commission

2 *N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094 (2023) (FERC Order), *notice denying reh'g and providing for further consideration*, 183 FERC ¶ 62,034 (2023).

Reliability Standard EOP-012-3 is being revised to address FERC directives in the June 2024 order approving EOP-011-4 and EOP-012-2[3].

Defined Terms

Previous DTs developed five defined terms to be added to the NERC Glossary of Terms to make the requirements easier to read and understand. Project 2024-03 updated one term (Generator Cold Weather Constraint) to meet the FERC directives in the June 2024 Order and provided additional language to clarify issues noted during the development of EOP-012-3, 2024 Small Group Advisory Session(s), and input received during outreach with industry. These five terms are:

Extreme Cold Weather Temperature

The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 1/1/2000 through the date the temperature is calculated.

The definition of Extreme Cold Weather Temperature (ECWT) was developed by the 2021-07 Drafting Team (DT) to provide clarity to the Generator Owner (GO) on determining what temperature triggers the requirement obligations. Each GO should select a reliable source of data from a recording location near the plant to determine their ECWT. Sources could include, for example, the National Weather Service (NWS) or National Oceanographic and Atmospheric Administration (NOAA) weather stations, Federal Aviation Administration (FAA) weather stations, or Environment and Climate Change Canada location for Canadian entities[4], etc. NOAA's National Centers for Environmental Information provides Climate Data Online (CDO) as a free resource that includes quality-controlled weather data and 30-year Climate Normals[5]. In general, GOs should use the location nearest the plant, but may select a further location if geographic or local climatic patterns make a further location more representative of the weather at the generating unit. GOs may use on-site weather stations if data, which reasonably matches reliable nearby off-site sources since January 1, 2000, is available. The starting period chosen by the 2021-07 DT to gather data to determine the lowest temperatures that occur near a facility is based on the completion of the modernization of the National Weather Service project known as MAR (Modernization and Associated Restructuring). This project was completed in the year 2000. In general, the National Weather Service modernization provides weather data to be available at most large airports. This will make it fairly accessible for companies to gather data and perform the required analysis. The December through February timeframe was selected to correspond to the meteorological winter, as defined by NOAA.[6]

The 2021-07 DT discussed methods for determining an ECWT with engineering design professionals, and it was determined that it is typical engineering practice to use a statistical approach to determine the design temperature when implementing generation facility freeze protection measures. The 2021-07 DT determined that only winter temperature values (i.e. between December and February) shall be used for the statistical approach and based on analysis of multiple weather data sites, it was determined that by using the lowest 0.2 percentile, there will be sufficient data points to ensure that a single hour at a temperature that may not be accurate, or may be a statistical anomaly, doesn't result in an overly

[3] *N.AM.Elec.Reliability Corp.*, 187 FERC ¶ 61,204 (FERC Order)
4 Environment and Climate Change Canada - Canada.ca
5 https://www.ncei.noaa.gov/products/land-based-station/us-climate-normals
6 https://www.ncei.noaa.gov/news/meteorological-versus-astronomical-seasons
[6] Report (nerc.com)

conservative design or preclude the ability of the GO to use historical operating data to prove compliance to the requirements. The 2021-07 DT selected the 0.2 percentile of winter month temperatures since 1/1/2000 to identify a temperature which has been rarely surpassed, but which allows some margin for a GO to have previously demonstrated successful operation. The 2021-07 DT considered using the lowest recorded hourly ambient temperature, but upon further review of the historical weather data and generally accepted design principles, determined that the statistical approach to setting the ECWT for a site's location was more reasonable.

The 2024-03 DT recognized comments and concerns raised during the 2024 Small Group Advisory Session on cold weather preparedness regarding application of the ECWT calculation if hourly temperature values were questionable. If complete data sets are not available (e.g., data is corrupt or missing) at a single weather station back to January 1, 2000, the GO should document the methodology they use to determine their ECWT, such as appending data from multiple weather stations or selecting a complete or partial data set from a weather station further away from the facility. The 2021-07 and 2024-03 DTs realized that a complete data set (i.e., all hours of every day of every year for the months of December, January, and February) may not be available due to a variety of technical reasons. To that point, the Generator Owner's approach in handling the missing/corrupt data should be documented in their methodology and available to Compliance Monitoring Enforcement Program (CMEP) staff as needed. Please reference the Calculating Extreme Cold Weather Temperature document drafted by the 2021-07 DT and updated by the 2024-03 DT for an example of how to calculate the ECWT.

Generator Cold Weather Critical Component

Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

The 2021-07 DT felt the best method to address where freeze protection measures should be implemented was to define a term which specifies a subset of components that may be susceptible to freezing and are critical to the operation of generating units. GOs should consider previous freeze-related issues experienced by the generating unit(s), as well as actions taken to mitigate those freeze-related issues, when establishing its list of Cold Weather Critical Components. The 2021-07 DT also felt it is appropriate to specifically exclude components that are not susceptible to freezing due to being inside heated buildings that maintain the interior temperature above freezing.

The 2021-07 DT's intent with regard to the language "that is under the Generator's Owner's control" was to clearly delineate that cold weather events external to the generation site such as loss of fuel supply or loss of auxiliary power to the site that resulted in a Generator Cold Weather Reliability Event (see definition below) would not be subject to this standard. Furthermore, ice buildup on transmission lines and/or high voltage lines between the generating station and point of interconnection with the Transmission Owner would not constitute a freezing condition in the context of this Standard, and therefore, these lines would not be considered a Generator Cold Weather Critical Component.

The 2021-07 DT's intent with the use of the phrase "permanent building" is to refer to a structure that is in place year round, shall accommodate personnel entry, and has a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit for the purpose of protecting components from freezing (e.g. heated container that protects inverter-based resources or battery energy systems). The 2024-03 DT recognized comments and concerns raised during the 2024 Small Group Advisory Session on cold weather preparedness regarding heating of the "permanent building." The HVAC/heating system is not a freeze protection measure in terms of being included in the cold weather preparedness plan as it is not protecting a Generator Cold Weather Critical Component (per the definition) nor is it a Generator Cold Weather Critical Component. The 2024-03 DT expects the HVAC/heating system to be part of routine maintenance and monitoring to ensure that the heated building remains above 32 degrees Fahrenheit.

Fixed Fuel Supply Component

Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

The 2021-07 DT wanted to clarify the boundaries of responsibility for the GO as it relates to sites having fuel handling equipment within their control and responsibility to provide freeze protection. The intent of this definition is to clarify that mobile equipment is not part of this requirement, but permanent fixed equipment impacting fuel delivery needed for generation is included.

Generator Cold Weather Reliability Event

One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

<u>Key Recommendation 1d:</u> To require Generator Owners that experience outages, failures to start, or derates due to freezing to review the generating unit's outage, failure to start, or derate and develop and implement a corrective action plan (CAP) for the identified equipment, and evaluate whether the CAP applies to similar equipment for its other generating units. Based on the evaluation, the Generator Owner will either revise its cold weather preparedness plan to apply the CAP to the similar equipment, or explain in a declaration (a) why no revisions to the cold weather preparedness plan are appropriate, and (b) that no further corrective actions will be taken. The standard drafting team should specify the specific timing for the CAP to be developed and implemented after the outage, derate, or failure to start, but the CAP should be developed as quickly as possible, and be completed by no later than the beginning of the next winter season.

The Key Recommendation from the Joint Inquiry Report recommends a Reliability Standard that requires GOs to develop a Corrective Action Plan for generating units that experience outages, failures to starts, or derates due to freezing. The Joint Inquiry Report identifies that most of the outages and derates in the February 2021 event were due to freezing of instrumentation, transmitters, sensing lines, or wind turbine blades (p 166 in the Joint Inquiry Report). As such, the 2021-07 DT followed the Joint Inquiry Report recommendation to require a Corrective Action Plan when the apparent cause of the event is freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, or freezing rain) on equipment. The 2021-07 DT felt that it was important to clearly call out freezing precipitation as these events were included in the outages and derates that identified as freezing in the Joint Inquiry Report. Furthermore, Key Recommendation 1c of the report requires GOs to account for the effect of precipitation. The 2021-07 DT has developed parameters around these events to clarify a reasonable baseline of what level of derate qualifies as an event, and provide additional language to identify what constitutes a start-up failure. With the additional clarifications, the 2021-07 DT determined that the standard would benefit from a defined term, to clearly and efficiently state what constitutes an event. The result is a new defined term, Generator Cold Weather Reliability Event, that defines the circumstances for which a Corrective Action Plan is required (i.e., when a freezing event affects the equipment within the control of the GO). The defined term will make the standard easier to understand and implement by providing clear and reasonable factors to determine whether the impact of an event requires mitigation. The 2021-07 DT is using the definition of apparent as defined in the Webster's dictionary as "clear or manifest to the understanding".

The Corrective Action Plan requirement applies to any forced outage due to freezing, regardless of duration. Derates, which are short lived (specified as four hours by the 2021-07 DT) or of small capacity impact (specified as less than 20 MW by the 2021-07 DT, which corresponds with the threshold for Bulk Electric System (BES) impacting generation units), are excluded from the Corrective Action Plan requirement to limit the administrative burden to GOs for events that are minimally impacting to the BES. Also excluded are proactive operational actions to limit the potential of forced outages or derates. It should be noted that nothing in this standard prevents a GO from taking its own corrective actions resulting from such events. Startup failures for conventional generation are defined using the GADS definition with the removal of "following an outage or reserve shutdown", since the definition of reserve shutdown is different in GADS than it is in some of the Regional Transmission Organizations (RTO's) and Independent System Operators (ISOs). From the GADS data reporting instructions, the startup period for each unit is determined by the operating company. It is unique for each unit and depends on the condition of the unit at the time of startup (cold, warm, or hot). A typical unit startup occurs in three phases: warm up, synchronization, and ramp up. NERC defines a startup period to begin with the command to start and end when the unit is synchronized. A startup failure begins when a problem preventing the unit from synchronizing occurs. The startup failure ends when the unit is synchronized, another startup failure occurs, or the unit enters another permissible state.

The 2021-07 DT determined that Corrective Action Plans will be required for any freezing event that occurs at temperatures above the generator site's ECWT. By using the site's ECWT, as opposed to the generator unit minimum temperature as defined by the GO in Requirement R1 Part 1.2.2 as the threshold, this achieves the following:

- Provides a consistent basis for the temperature at which CAPS are required for all GOs

- Provides a consistent basis for when Corrective Action Plans are required for all generation types
- Provides a consistent basis for when Corrective Action Plans are required regardless of the level of effort that GOs may have applied to-date winterizing their generators such that they can operate to the ECWT that their sites will reasonably experience
- Removes any incentive (perceived or real) to not further winterize GOs generating sites to meet the ECWT at the GO site by not providing a window where one site might not be subject to the Corrective Action Plan requirement while sites in the same vicinity experiencing the same temperatures are subject to this requirement
- Removes any disincentive for GOs to design the units to operate well below the ECWT for a site by not requiring them to perform Corrective Action Plans while sites in the same vicinity experiencing the same temperatures are subject to this requirement

Generator Cold Weather Constraint

A condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components

The 2024-03 DT reviewed the material from the June 2024 FERC Order when determining how best to update the Generator Cold Weather Constraint definition. The 2024-03 DT relied upon industry and FERC guidance as a basis for updating the definition language and the process captured in Attachment 1 of EOP-012-3. The 2024-03 DT also ensured that constraint language would be fully captured within the Standard itself through Attachment 1.

The 2024-03 DT felt that an Attachment that included specific language further explaining Generator Cold Weather Constraints with discrete pre-approved Generator Cold Weather Constraints and other Generator Cold Weather Constraints requiring pre-approval meets the FERC (and industry) expectations to provide unambiguous, objective, and auditable language. The 2024-03 DT discussed providing clarity with examples knowing that additional instances or conditions that may be considered a Generator Cold Weather Constraint may exist.

Per the FERC Order, NERC staff is responsible to provide a process describing the receipt, evaluation, approval (as needed), and validation of Generator Cold Weather Constraints. This process is captured in the Generator Cold Weather CAP Extension and Constraint Process document.

Attachment 1 contains a non-comprehensive list of preapproved Generator Cold Weather Constraints as well as a list of situations, circumstances, and criteria that may constitute a Generator Cold Weather Constraint that a Generator Owner must submit to the CEA for approval.

Once a declaration is approved by the CEA it is considered valid. It is the GO's responsibility to document in the Generator Cold Weather Constraint declaration the circumstances and reasons why the modification needed to address the freeze protection measure(s) is not being implemented. A Generator Cold Weather Constraint declaration that no further corrective actions will be taken is expected to be used sparingly.

The 2024-03 DT is intentionally leaving room for additional instances of Generator Cold Weather Constraints as it would be impossible to foresee every potential circumstance that could possibly necessitate a review of potential freeze protection technologies across the breadth of the US and Canada and the breadth of generating unit types and ages that fall under this Standard. Furthermore, the 2024-03 DT wants to ensure that the Standard language supports the adoption of new freeze protection measure practices, methods, or technologies while not immediately requiring a new freeze protection measure practice, method, or technology to be implemented industry-wide when a leading utility pilots a novel approach, as this would be a disincentive to utilities piloting new technologies. The 2024-03 DT encourages additional studying and implementation of freeze protection measures to remove Generator Cold Weather Constraints as appropriate over time.

In the June 27, 2024, FERC Order, there was a directive to change the frequency of Generator Cold Weather Constraint reviews to facilitate consideration of new freeze protection measure technologies to reduce the risk resulting from the need for a Generator Cold Weather Constraint. That change is capture in Requirement R8 discussed later in this Technical Rationale document.

Facilities

4.1. *Facilities:*

4.1.1. *Bulk Electric System (BES) generating units. For purposes of this standard, the term "generating unit" subject to these requirements refers to the following BES resources:*

4.1.1.1. *A BES generating resource identified in the BES definition, Inclusion I2 and I4; or*

4.1.1.2. *A Blackstart Resource, identified in the BES definition, Inclusion I3.*

After reviewing this reference material and the efforts of the 2021-07 DT, the 2024-03 DT determined that EOP-012-3 should continue to apply to all Bulk Electric System (BES) generating units in order to ensure consistency in extreme cold weather preparedness. The Applicability section first defines "generating unit" as a BES resource. The NERC Glossary of Terms provides the foundation for what BES resources are included in the definition (see Inclusions I2 through I4). Additionally, Blackstart Resources are also specifically declared subject to the winterization requirements. Such Blackstart Resources, consistent with the NERC Glossary of Terms, are those units designated in the Transmission Operator's restoration plans. Proposed EOP-012-3 clarifies which Facilities and their Generator Cold Weather Critical Components are subject to implementing freeze protection measures through specific language in Requirements R2 and R3. The 2024-03 DT briefly discussed Generator Owner Category 2 Inverter-Based Resource applicability to EOP-012-3 but it was noted the applicability is under review per the Order 901 NERC Plan so no changes were presented.

Requirement R1

R1. *At least once every five calendar years, each Generator Owner shall, for each of its applicable generating unit(s): [Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

1.1. *Calculate the Extreme Cold Weather Temperature for each of its applicable unit(s) and identify the calculation date and source of temperature data; and*

1.1.1. *If the re-calculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan under Requirement R4 within six (6) calendar months of the recalculation. If new corrective actions are needed to provide the required operational capability under Requirement R2 or R3, the entity shall develop a Corrective Action Plan within 6 calendar months of the recalculation.*

1.2. *Identify generating unit(s) cold weather data, to include:*

1.2.1. *Generating unit(s) operating limitations in cold weather to include:*

1.2.1.1. *Capability and availability;*

1.2.1.2. *Fuel supply and inventory concerns;*

1.2.1.3. *Start-up issues;*

1.2.1.4. *Fuel switching capabilities; and*

1.2.1.5. *Environmental constraints.*

1.2.2. *Generating unit(s) minimum:*

- *Design temperature and if available, the concurrent wind speed and precipitation;*
- *Historical operating temperature at least one hour in duration, and if available, the concurrent wind speed and precipitation; or*
- *Current cold weather performance temperature determined by an engineering analysis, which includes the concurrent wind speed and precipitation.*

The Project 2024-03's Technical Rationale language for Requirement R1 did not substantially change from 2021-07 DT language and, as such, use of DT below is referencing 2021-07 DT. Much of the criteria of R1 is carried over from the previously approved EOP-011 Standard and requires the GO to document several cold weather performance parameters for the unit. This information is valuable, and in some cases, must be shared with other entities. For Requirement R1 Part 1.1, the GO is required to calculate the Extreme Cold Weather Temperature (ECWT) for each unit using a reliable source of data (See the supporting document "Calculating Extreme Cold Weather Temperature"). The DT believes that the GO is in the best position to select the most representative weather information relative to its generating unit. The ECWT will be updated if a new lower ECWT is determined under the periodic review requirement of R1. Defining

the operating limitations in Requirement R1 Part 1.2.1 will make affected personnel more aware of unit capabilities and constraints as well as systems and practices that may be necessary to ensure reliability in cold weather, particularly when alternative fuels are involved. In addition, the unit minimum temperature identified in Requirement R1 Part 1.2.2 is used to demonstrate compliance with Requirement R3 for existing units. The DT chose one hour of historical operating data recognizing that there is extremely limited historical operating data available for a unit below their ECWT. This was not to infer that the DT expects that existing generation will only reliably operate for one hour during an extreme cold weather event. The information contained within Requirement R1 Part 1.2 is required to be requested by the Balancing Authorities in TOP-003 to make sure they have the most accurate unit performance information possible for their reliability analysis during the winter season. It is critical, especially if a Corrective Action Plan, extension request for a Corrective Action Plan, or a Generator Cold Weather Constraint declaration is in effect, that the Generator Owner keep Requirement R1 Part 1.2 information updated with those entities requiring said information. The 2024-03 DT did not add a notification Requirement to EOP-012-3 as TOP-003 and IRO-010 obligate the applicable entities (Balancing Authority, Reliability Coordinator, and Transmission Operator) to have "*Provisions for notification of BES generating unit(s) during local forecasted cold weather to include*" Requirement R1 Part 1.2 information. Balancing Authority(ies), Reliability Coordinators, and Transmission Operators should ensure complete coverage and timeliness of Requirement R1 Part 1.2 data submission within their data specifications.

It is recognized that the determination of a single unit minimum temperature is of limited value if applied without consideration of the other ambient conditions under which it was determined, that is, wind and precipitation. Consideration of wind and precipitation, along with the minimum temperature, provides a greater understanding of the potential generating unit capability for cold weather resource planning. The Standard requires that the GO include wind and precipitation data with their generating unit minimum temperature data when the data is available. The impact of deviations from this known temperature/wind/precipitation stated point are expected to be evaluated qualitatively. For example, if the historical minimum temperature occurred at low wind and dry conditions, and actual future cold weather event expected conditions are high winds with precipitation, planning personnel will recognize that a specific unit may not achieve the minimum temperature and can arrange for additional resources. The opposite also applies, i.e., if a design minimum temperature assumes some level of wind and precipitation and actual cold weather expectations are for low wind and dry conditions, planning personnel will recognize that there is increased likelihood that a generation resource may continue to be available below its minimum temperature. If no information about wind or precipitation is known, wind and precipitation are assumed to be zero at the minimum temperature until further information is obtained. The 2024-03 DT did provide updated language within the "Defined Terms" section of this Technical Rationale document to capture concerns regarding ECWT data availability.

Requirement R2

R2. *Applicable to generating units which begin commercial operation[7] on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[8] shall: [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*

2.1 *For generating units for which the Generator Owner first contractually committed to design criteria[9] relevant to this Requirement before February 16, 2023[10]:*

- *Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or*

- *Have a Corrective Action Plan(s) in place (to include any applicable Generator Cold Weather Constraint(s) upon beginning commercial operation, to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours.*

2.2 *For generating units for which the Generator Owner first contractually committed to design criteria[11] relevant to this Requirement on or after February 16, 2023[12]:*

- *Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or*

Document in a declaration, with justification, as applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

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[7] Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing.
[8] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.
[9] Such commitments would be demonstrated by signed contractual commitments, emailed correspondence agreeing to thermal design criteria, or other similar documented evidence.
[10] Or the date the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction.
[11] Such commitments would be demonstrated by signed contractual commitments, emailed correspondence agreeing to thermal design criteria, or other similar documented evidence.
[12] Or the date the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction.

The Joint Inquiry Report Key Recommendation 1f referenced recommendation 12 of the 2011 report[8] suggesting that consideration should be given to designing all new generation plants and designing modifications to existing plants (unless committed solely for summer peaking purposes) to be able to perform at the lowest recorded ambient temperature for the nearest location for which historical weather data is available.

The 2021-07 DT believed and 2024-03 DT believes that there needs to be allowances made for units that are in the development process, and for which the design phase may have already commenced. The 2021-07 DT recommended this requirement apply to generation going into service three (3) years after the effective date of EOP-012-1 (i.e., October 1, 2027, based on an effective date of October 1, 2024). The 2024-03 DT edited Requirement R2 in response to the June 2024 FERC Order Paragraph 72 to create differentiation among units based on when the ECWT definition became effective (February 16, 2023). The ECWT definition date was selected as it is a specific point in time where Generator Owners had clear direction for design implications as well as being unambiguous and auditable. The changes proposed recognize the potential conditions that exist in terms of generators under consideration or construction, but removes the means of achieving compliance through a Corrective Action Plan for units establishing their design criteria on or after February 16, 2023. Allowances for Corrective Action Plans to achieve the required design criteria were maintained as a means of compliance, but only for units which established design criteria prior to February 16, 2023. Additionally, the 2024-03 DT identified that Generator Owners may need to declare a Generator Cold Weather Constraint for units that commit to design criteria on or after the February 16, 2023 date under certain circumstances. Generation that begins commercial operation before October 1, 2027 would be subject to Requirement R3.

GOs with generating units that enter commercial operation on or after October 1, 2027 that contractually committed to design criteria before the ECWT definition approval date (February 16, 2023) and cannot operate for twelve (12) continuous hours at the ECWT taking into account a concurrent twenty (20) mph wind speed shall have a Corrective Action Plan upon beginning commercial operations. The GO then must implement the Corrective Action Plan according to Requirement R7. It is recognized that Generator Cold Weather Constraints may exist that prevent a new generating unit(s) from being capable of twelve (12) continuous hours of operation at their identified ECWT. Thus, the 2021-07 DT included, in Requirement R7 Part 7.4, the option for the GO to make a declaration supporting why Generator Cold Weather Constraints preclude the ability to implement appropriate freeze protection measures.

GOs with generating units that enter commercial operation on or after October 1, 2027 that contractually committed to design criteria on or after the ECWT definition approval date (February 16, 2023) that are not able to comply with Requirement R2 would be required to declare a Generator Cold Weather Constraint in accordance with Requirement R8.

The 2021-07 DT chose 12 hours of continuous operation because it is a typical length of the nighttime in winter in most regions of the US and Canada and typically include the hours with the coldest experienced temperatures. The 2021-07 DT was of the opinion that tying the requirement to the 12-hour period would

provide a reasonable level of reliability during a cold weather event. The 2021-07 DT chose a concurrent sustained 20 mph wind speed after an evaluation using the wind chill formula developed by the NWS in the United States. Though wind chill temperature is not an exact science, it is widely understood to reflect the non-linear increased rate of convective heat loss due to air moving at different velocities. Commonly available charts show wind chill temperatures as a function of actual air temperature at various wind speeds. Approximately 2/3 of the wind chill temperature drop between 0–60 mph is achieved at 20 mph. Using the NWS chart, this holds true for still air temperatures starting at 40 F and dropping in 20-degree increments to -40 F. Further, 20 mph is a wind speed commonly experienced across the ERO and yet appropriately higher than the approximate average wind speeds in the United States and Canada, 6-12 mph and 8-11 mph respectively. Each of these three probabilistically infrequent conditions (the ECWT, a steady 20 mph wind, and a duration of 12 continuous hours at these conditions) is in and of itself conservative. When they have their effects combined, it results in a requirement that will significantly contribute to BES reliability during extreme cold weather conditions.

Requirement R3

The Drafting Team did not make any changes to this Requirement. Therefore, the technical rationales are not provided here.

Requirement R4

R4. *Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness plan(s) shall include the following, at a minimum:*
[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]

4.1 *The lowest calculated Extreme Cold Weather Temperature for each unit, as determined in Requirement R1;*

4.2 *The generating unit cold weather data, as determined in Part 1.2;*

4.3 *Documentation identifying Generator Cold Weather Critical Components;*

4.4 *Documentation of freeze protection measures implemented on Generator Cold Weather Critical Components which may include measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain); and*

4.5 *Annual inspection and maintenance of generating unit(s) freeze protection measures implemented on Generator Cold Weather Critical Components.*

General Considerations

Requirement R4 requires GOs to develop and maintain cold weather preparedness plans for their unit(s) and describes the information and documentation required in such plans. It is an expansion of the cold weather preparedness plan required under Requirement R7 of EOP-011-2 and is intended to be used and reviewed regularly by the GO. Originally, Requirement R4 Part 4.5 required the GO to annually inspect and perform necessary maintenance of freeze protection measures. The 2024-03 DT added some clarifying language to ensure that annual inspection and maintenance of freeze protection measures is applied specifically to Generator Cold Weather Critical Components. While other freeze protection measures may be applied to equipment by the Generator Owner, the freeze protection measures included in the cold weather preparedness plan with annual inspections and maintenance are expected to be those applied to Generator Cold Weather Critical Components. Working in concert with other parts of EOP-012-3, including but not limited to Requirements R1, R5, R6, and R7, the substantive elements of the cold weather preparedness plan will be subject to review requirements, updated as necessary, and the GO is required to annually train personnel on its requirements.

Requirement R4 Part 4.1

In Requirement R4 Part 4.1, the GO is required to include in the cold weather preparedness plan the lowest ECWT, as calculated pursuant to Requirement R1, for each unit using reliable source(s) of data. The 2021-07 DT believed that the GO is in the best position to select the most representative weather information relative to its generating unit. The cold weather preparedness plan will be updated if a new lower ECWT is calculated under the Requirement R1 periodic review language.

Requirement R4 Part 4.2

Requirement R4 Part 4.2 is intended to capture within the cold weather preparedness plan the information being developed pursuant to Requirement R1 Part 1.2, which is carried over from the previously approved EOP-011 Standard, and requires the GO to document several cold weather performance parameters for the unit. This information is valuable, and in some cases, must be shared with other entities consistent with the data specification requirements contained in TOP-003 and IRO-010. A requirement for the GO to document this information within the cold weather preparedness plan ensures the information is readily available and documented when the GO responds to a data specification. It should be noted that if a Corrective Action Plan extension request is approved, the underlying generator cold weather data as called out in Requirement R1 Part 1.2 should be correctly identified by the Generator Owner and provided to the Reliability Coordinators, Balancing Authorities, and Transmission Operators as requested. The June 2024 FERC Order mentions this in Paragraph 3. The 2024-03 DT believes that the data specification Reliability Standards applicable to Reliability Coordinators, Balancing Authorities, and Transmission Operators (e.g., IRO-010 and TOP-003) require the entities to request the information and the GO is therefore obligated to provide the most current version of the Corrective Action Plan. The 2024-03 DT did not believe a notification Requirement was needed in EOP-012-3 in addition to those already existing in the data specification Reliability Standards. The 2024-03 DT encourages parties to work together to ensure the most accurate and up to date information is provided especially when conditions increase risk to reliable operations. See the Technical Rationale for Requirement R1 for substantive rationale regarding the operating limitations and generating unit minimum temperatures documented in the cold weather preparedness plan.

Requirement R4 Part 4.3
In Requirement R4 Part 4.3, the GO identifies the Generator Cold Weather Critical Components to help inform their decision on where to implement appropriate freeze protection measures. The NERC *Reliability Guideline, Generating Unit Winter Weather Readiness – Current Industry Practices*[10], presents a suggested list of components that GOs may choose to utilize when developing their own Generator Cold Weather Critical Component inventory. The GO shall develop and maintain a list of Generator Cold Weather Critical Components for each unit.

Requirement R4 Part 4.4
Requirement R4 Part 4.4 requires GOs to document the freeze protection measures implemented on Generator Cold Weather Critical Components. These freeze protection measures should include those to reduce the cooling effects of wind. Requirement R4 does not require GOs to install new freeze protection measures to reduce the cooling effects of wind, but rather to identify freeze protection measures for Generator Cold Weather Critical Components that will protect against heat loss and the effect of freezing precipitation, where applicable, and document those measures (e.g., water-resistant insulation, protective shielding, insulated boxes, etc.). These measures could include temporary measures as well, such as wind breaks, but there is no expectation for entities to list all climate-controlled areas as freeze protection measures. Specifically, the freeze protection measures applied to Generator Cold Weather Critical Components must be captured in the cold weather preparedness plan.

Requirement R4 Part 4.5
Requirement R4 Part 4.5 is largely carried over from the previously approved EOP-011 Standard and requires annual inspection and maintenance of the freeze protection measures applied to Generator Cold Weather Critical Components identified in the cold weather preparedness plan. The 2024-03 DT added clarifying language to emphasize the need to effectively mitigate risk on the Generator Cold Weather Critical Components. This Requirement ensures these freeze protection measures will be ready and serviceable when needed.

Requirement R5

The Drafting Team did not make any changes to this Requirement. Therefore, the technical rationales are not provided here.

Requirement R6

R6. *Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32*

degrees Fahrenheit (zero degrees Celsius),[13] *develop and implement a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed before the first day of July, but not more than 150 days after the Generator Cold Weather Reliability Event. The Generator Owner shall: [Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

6.1. *Ensure the Corrective Action Plan contains at a minimum:*

6.1.1. *A summary of the identified cause(s) for the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;*

6.1.2 *A list of actions to add new or remedy existing freeze protection measures*;

6.1.3. *An identification of operating limitations or impacts to the cold weather preparedness plan that would apply until execution of the corrective action(s) identified in the Corrective Action Plan;*

6.1.4 *A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required;*

6.1.5 *A timetable specifying that implementation of the Corrective Action Plan shall be* completed prior to the first day of December following the Generator Cold Weather Reliability Event; and*;*

6.1.6 *A review of applicability to similar freeze protection measures at generating units owned by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of the Generator Cold Weather Reliability Event;*

6.2. *Update the Corrective Action Plan action(s) and timetable(s), with justification, and submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 6.1. The submitted Corrective Action Plan extension request shall include the following;*

6.2.1. *Circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;*

6.2.2. *Revisions to the selected actions in Part 6.1, if any, including utilization of Operating Procedures, if applicable; and*

6.2.3. *Updated timetable for implementing the selected actions in Part 6.1.*

6.3. *Document in a declaration, with justification, any Generator Cold Weather Constraint in accordance with Requirement R8 , if applicable, that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.*

[13] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

Key Recommendation 1d: To require Generator Owners that experience outages, failures to start, or derates due to freezing to review the generating unit's outage, failure to start, or derate and develop and implement a corrective action plan (CAP) for the identified equipment and evaluate whether the CAP applies to similar equipment for its other generating units. Based on the evaluation, the Generator Owner will either revise its cold weather preparedness plan to apply the CAP to the similar equipment or explain in a declaration (a) why no revisions to the cold weather preparedness plan are appropriate, and (b) that no further corrective actions will be taken. The standard drafting team should specify the specific timing for the CAP to be developed and implemented after the outage, derate, or failure to start, but the CAP should be developed as quickly as possible and be completed by no later than the beginning of the next winter season.

The Key Recommendation from the Joint Inquiry Report recommended a Reliability Standard that requires GOs to develop a Corrective Action Plan for generating units that experience outages, failures to starts, or derates due to freezing. The Joint Inquiry Report identifies that most of the outages and derates in the February 2021 event were due to freezing of instrumentation, transmitters, sensing lines, or wind turbine blades (p 166 in the Joint Inquiry Report). As such, the 2021-07 DT followed the Joint Inquiry Report recommendation to require a Corrective Action Plan when the apparent cause of the event is freezing. The 2021-07 DT developed parameters around these events to clarify a reasonable baseline of what level of derate qualified as an event and provide additional language to identify what constitutes a start-up failure. With the additional clarifications, the 2021-07 DT determined that the Reliability Standard would benefit from a defined term, to clearly and efficiently state what constitutes an event. The result was a defined term, Generator Cold Weather Reliability Event, that describes the circumstances for which a Corrective Action Plan is required (i.e., when a freezing event affects the equipment within the control of the GO). The defined term made the Reliability Standard easier to understand and implement by providing clear and reasonable factors to determine whether the impact of an event requires mitigation. However, because of the June 2024 FERC Order, the development and implementation of a Corrective Action Plan was required to be updated by the 2024-03 DT to provide clearer obligations for those units that suffer a Cold Weather Reliability Event. In general, the 2024-03 DT understands that if a Generator Cold Weather Reliability Event occurs, Generator Owners will remediate the issue as soon as possible.

General Considerations for All Corrective Action Plans

To simplify the proposed requirements related to creating a Corrective Action Plan, the 2021-07 DT used the NERC Definition of a Corrective Action Plan. The Corrective Action Plan definition reads "A list of actions and an associated timetable for implementation to remedy a specific problem." As written, the definition requires two parts for a document to qualify as a Corrective Action Plan, i.e., a list of items to be addressed and a timeline for completion. A Corrective Action Plan without both a list of actions and the timeline to implement is not complete. The 2024-03 DT provided additional language for Corrective Action Plans to clarify expectations for those Corrective Action Plans created as a result of a Generator Cold Weather Reliability Event and other Corrective Action Plans referenced throughout the Requirement language. The resulting language kept the underlying structure developed during previous Projects but clarified and added information as needed to meet the June 2024 FERC Order.

The Corrective Action Plan requirement applies to Generator Cold Weather Reliability Events. It should be noted that nothing in this standard prevents a GO from taking its own corrective actions resulting from events that do not meet the criteria of a Generator Cold Weather Reliability Event. Startup failure criteria were based on the GADS definition with the removal of "following an outage or reserve shutdown", since the definition of reserve shutdown is different in GADS than it is in some of the Regional Transmission Organizations (RTO's).

R6 requires the GO to develop a Corrective Action Plan by the first of July or within 150 days of the Generator Cold Weather Reliability Event. These timeframe options were chosen by the 2021-07 DT and maintained by the 2024-03 DT to allow GOs to review multiple events holistically following a winter season, if that scenario occurs, and create one Corrective Action Plan for components with common failure causes. Care should be taken when developing a multi-unit or multi-event Corrective Action Plan to ensure it meets the Corrective Action Plan criteria for each unit (e.g., actions and timetables may be different.)

The 2021-07 DT determined that Corrective Action Plans would be required for any freezing event that occurs at temperatures at or above the site's ECWT in accordance the definition of Generator Cold Weather Reliability Event. Using the site's ECWT as the threshold, as opposed to the generator unit minimum temperature as determined by the GO, achieves the following:

- Provides a consistent basis for the temperature at which Corrective Action Plans are required for all GOs
- Provides a consistent basis for when Corrective Action Plans are required for all generation types
- Provides a consistent basis for when Corrective Action Plans are required regardless of the level of effort that GOs may have applied to-date winterizing their generators such that they can operate to the ECWT that their sites will reasonably experience
- Removes any incentive (perceived or real) to not further winterize GOs sites to meet the ECWT at the GO site by not providing a window where one site might not be subject to the Corrective Action Plans requirement while sites in the same vicinity experiencing the same temperatures are subject to this requirement
- Removes any disincentive for GOs to design the units to operate well below the ECWT for a site by not requiring them to perform Corrective Action Plans while sites in the same vicinity experiencing the same temperatures are subject to this requirement

If a Corrective Action Plan extension is denied by the CEA, then the GO's Correction Action Plan completion date to meet compliance will be equal to the CEA's evaluation time period added to the original due date.
The 2024-03 DT provided clarifying language to have Corrective Action Plans developed in response to Generator Cold Weather Reliability Events completed by the first day of December of the winter season following the Generator Cold Weather Reliability Event. Allowances for events which occur early winter season, which varies across the North American continent, were provided with the expectation that more

transient fixes occurring after a Generator Cold Weather Reliability Event would be applied quickly but allowing a reasonable time horizon for compliance with this Requirement. A Corrective Action Plan triggered by a Generator Cold Weather Reliability Event and for which the apparent cause is the failure of relatively simple existing piece of freeze protection equipment, the scope of the Corrective Action Plan may be documented after the fact. Such prompt repairs may be completed before creation of the Corrective Action Plan, and the GO may complete the implementation of the Corrective Action Plan simply by evaluating the requirements of R6 and documenting how and when the repair work was completed. An example of this circumstance would be a freezing event caused by a single heat trace circuit failure which would have been sufficient to prevent the event had it not failed. Just to be clear, a Corrective Action Plan is required for Generator Cold Weather Reliability Events. The June 2024 FERC Order also directed changes affecting the application of a Generator Cold Weather Reliability Event Corrective Action Plans with regards to other units within a Generator Owner's fleet. The 2024-03 DT followed the FERC example and allowed a 24-calendar month window to address corrective actions on other units. This timeframe would allow Generator Owners with larger fleets to accommodate the changes if needed.

The 2024-03 DT also created language that allows for Corrective Action Plan extension requests using an ERO Enterprise process. ERO Enterprise staff have developed a process that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule). The process will allow a thorough review in a timely manner for any Corrective Action Plan extension requests including those that go beyond the 24 or 48 calendar month timetables. While there may be actions impacting the implementation and completion of Corrective Action Plans beyond the control of Generator Owners (e.g., supply chain issues), the Generator Owners should accelerate completion of corrective actions as much as possible to support reliable operations.

The 2024-03 DT updated language regarding Generator Cold Weather Constraints to clarify expectations. Please review Requirement R8 and Attachment 1 for further discussions of Generator Cold Weather Constraints.

Requirement R7

R7. *Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, or R3, shall, as applicable: [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

7.1. *Include a timetable for implementing the selected corrective action(s) that shall:*

7.1.1. *List the action(s) which remedy(ies) issues with existing freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan, regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures;*

7.1.2. *List the action(s) which require(s) new freeze protection measures, if any, to be completed within 48 calendar months of completing development of the Corrective Action Plan; and*

7.1.3. *Describe the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures.*

7.2. *Complete all the actions described in Corrective Action Plan in accordance with the specified timetables in Part 7.1;*

7.3. *Submit a Corrective Action Plan extension request, for the approval of the CEA, where the timetable(s) exceed the timelines for completing selected actions are projected to exceed the timelines in Part 7.1. The submitted request shall:*

7.3.1 *Explain the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;*

7.3.2 *Include, as applicable, revisions to the selected actions in Part 7.1, including utilization of Operating Procedures; and*

7.3.3 *Include an updated timetable for implementing the selected actions in Part 7.1.*

7.4. *Document in a declaration, with justification, any Generator Cold Weather Constraint in accordance with Requirement R8 that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.*

In EOP-012-2, R7 was expanded from EOP-012-1 to provide additional definition on the requirements to implement a Corrective Action Plan, and to meet the direction for this requirement set by the February 2023 FERC Order. One such direction was to define expectations on implementation timelines for Corrective Action Plans. Under EOP-012-2 R7, Corrective Action Plans were divided into two categories: 1) those which address existing freeze protection measure(s), and 2) those which require new equipment or freeze protection measure(s). The former category required completion of the Corrective Action Plan to remedy the cause(s) within 24 months, and the latter required completion of the Corrective Action Plan within 48 months. The 2021-07 DT modeled this timeline structure after similar Corrective Action Plan implementation requirements in TPL-007. These are maximum durations and entities are expected to work diligently to correct issues and take prompt actions to mitigate future issues as soon as practical. At the same time, the 2021-07 DT recognized that the following time consuming activities make the 24 and 48 calendar months maximum timelines reasonable: scoping applicability to similar units, freeze protection engineering and design, project development, annual budgeting process, material supply lead times, outage scheduling, skilled labor availability, and startup/commissioning. However, the June 2024 FERC Order, established directives to clarify timelines and responsibilities associated with Corrective Action Plans. The 2024-03 DT chose to specifically remove Corrective Action Plan obligations for Generator Cold Weather Reliability Events and place those in Requirement R6. For Requirement 7, the 2024-03 DT provided clarifying language regarding existing and new freeze protection measures and the

associated completion timelines. Language was provided for Corrective Action Plans that may include changes to existing freeze protection measures and addition of new freeze protection measures to help clarify expectations for completing the corrective actions. Entities are expected to work diligently to correct issues and take prompt actions to mitigate future recurrence. The 2024-03 DT updated Part 7.1.3. for completeness to ensure updates would be made to document needed changes to the cold weather preparedness plan(s) to eliminate recurrence of issue(s) identified in the Corrective Action Plan. In clarifying these timeframes, the 2024-03 DT considered the FERC directives.

Within the revised Requirement R7, the GO is required to implement the Corrective Action Plan within a timetable defined by the GO in the Corrective Action Plan but limited by maximum durations in Part 7.1. If the GO is unable to complete the Corrective Action Plan within the time limits in Part 7.1, or the corrective action(s) change, the GO is required to update the Corrective Action Plan with justification. GOs that are unable to complete the Corrective Action Plan due to a Generator Cold Weather Constraint are required under Part 7.4 to create a declaration of the Generator Cold Weather Constraint which shall be provided to the Compliance Enforcement Authority per Requirement R8. Further requirements for the Generator Cold Weather Constraints are provided under Requirement R8.

The 2024-03 DT also created language that allows for Corrective Action Plan extension requests using an ERO Enterprise process. ERO Enterprise staff developed a process that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule). The process will allow a thorough review in a timely manner for any Corrective Action Plan extension requests including those that go beyond the 24 or 48 calendar months. The 2024-03 DT utilized the precedent set by TPL-007 to ensure the unique circumstances of each request will be considered while also avoiding potential compliance burdens which may not have a corresponding reliability benefit (e.g. specific timelines for submission & approval of extension requests). While there may be actions impacting the implementation and completion of Corrective Action Plans beyond the control of Generator Owners (e.g., supply chain issues), the Generator Owners should accelerate completion of corrective actions as much as possible to support reliable operations. It is expected that extension requests will be limited in nature. Generator Owners will have to provide clear justifications with supporting materials within the extension request. Due diligence in ordering equipment, obtaining permits, etc., will be considered as part of the determination of whether a particular set of facts constitute circumstances beyond the control of the entity. Denials of extension requests will be minimized if Generator Owners work diligently to correct issues and take prompt actions. Denial of an extension means the initial timelines for corrective actions must be met.

The 2024-03 DT updated language regarding Generator Cold Weather Constraints to clarify expectations. Please review Requirement R8 for further discussions of Generator Cold Weather Constraints.

If one or more actions within a Corrective Action Plan fall under a Generator Cold Weather Constraint declaration, it is the intent of the DT that only those affected actions would not be implemented as part of the Corrective Action Plan. The remaining corrective actions should be implemented per the timelines

provided unless dependent upon the corrective action triggering the Generator Cold Weather Constraint declaration.

Requirement R8

R8. *Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

8.1 *Submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 days of determining that the Generator Cold Weather Constraint is applicable. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit the Generator Cold Weather Constraint declaration(s) no later than 15 days after commercial operation;*

8.2 *Review any Generator Cold Weather Constraint declaration validated by the CEA every 24 calendar months to determine if it remains valid under Attachment 1*;

8.3 *Update the operating limitations associated with capability and availability under Requirement R1 Part 1.2 if applicable; and*

8.4 *If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with the timetables in Requirement R6 Part 6.1 or Requirement R7 Part 7.1, to begin from the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid*.

In the February 2023 FERC Order, the Commission expressed concern that a GO may make a Generator Cold Weather Constraint declaration without informing planning and operational entities (e.g., the Balancing Authority) that are expecting the reliable operation of the generating unit to its ECWT.[1] An additional concern was that the Generator Cold Weather Constraint declarations may be used by a functional entity as an opt-out of compliance with requirements set forth in the standards or in a corrective action plan.[2] To mitigate the concern, the Commission directed NERC to work with Commission staff and submit a data collection and assessment plan that contains information related to GO constraint declarations and explanations thereof.[3] The 2021-07 DT expected that ERO Enterprise compliance staff will be responsible for reviewing declared Generator Cold Weather Constraints and assessing compliance with the Generator Cold Weather Constraint definition criteria in accordance with established processes. The June 2024 FERC Order directives included more discrete language that required NERC to receive, review, evaluate, and confirm the validity of each Generator Cold Weather Constraint in a timely manner. Additionally, the June 2024 FERC Order directives required an increase in the frequency of reviews of Generator Cold Weather Constraints. If a Corrective Action Plan extension is denied by the CEA, then the GO's Correction Action Plan completion date to meet compliance will be equal to the CEA's evaluation time period added to the original due date.

The 2024-03 DT updated Requirement R8 to require the GO to submit, to the Compliance Enforcement Authority, a Generator Cold Weather Constraint in accordance with Attachment 1 under specific timelines. The ERO Enterprise staff have developed a process that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule) as a foundation for the Generator Cold Weather Constraint process. The process will allow a thorough review in a timely manner for any Generator Cold Weather Constraint submitted. The 2024-03 DT created Attachment 1 to provide clear expectations on Generator Cold Weather Constraint conditions. Attachment 1 contains some "pre-approved" Generator Cold Weather Constraint conditions as well as examples of other possible Generator Cold Weather Constraint conditions that may be considered valid. To be clear, the "pre-approved" Generator Cold weather Constraints require submittal per the ERO Enterprise process. The 2024-03 DT could not create an exhaustive list of Generator Cold Weather Constraint conditions but provided language that allows professional judgement to be utilized. The 2024-03 DT believes this process in conjunction with Requirement R8 and Attachment 1 effectively meets the FERC directive regarding receiving, reviewing, evaluating, and confirming the validity of Generator Cold Weather Constraints.

Initially EOP-012-1 required an annual review of Generator Cold Weather Constraints that was subsequently changed to five years in EOP-012-2. The June 2024 FERC Order directed that the review frequency be increased. While Generator Owners should perform a review and update any constraint declarations as needed, the 2024-03 DT developed language to require a review of validated Generator Cold Weather Constraints every 24 calendar months. The 2024-03 DT did send a survey out during the development of Requirement R8 language asking for stakeholder input and leveraged the results in the determination of 24 calendar months.
The 2021-07 DT believed that Generator Cold Weather Constraint declarations would be the exception but it is clear to the 2024-03 DT that certain conditions may exist (based on general weather patterns) that will increase the amount of Generator Cold Weather Constraint declarations and subsequent submittals. In anticipation of that scenario and following the June 2024 FERC Order the 2024-03 DT considers the ERO Enterprise process a valuable tool to capture data that may help future understanding of the effectiveness of the ECWT (which is required by the February 2023 FERC Order and subsequent NERC filing regarding cold weather data collection.)

Updated Generator Cold Weather Constraint declarations would also require an update to the operating limitations provided via data specifications to the entities overseeing reliability (e.g., Balancing Authority, Transmission Operator, or Reliability Coordinator). In this manner, information relevant to valid Generator Cold Weather Constraint declarations are made available to the planning and operational entities pursuant to their data collection authority contained in TOP-003 and IRO-010.

Attachment 1

Generator Owners shall determine the applicability of a Generator Cold Weather Constraint declared under Requirements R2, R6, and R7 as described below.

A Generator Cold Weather Constraint is any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the following criteria:

Pre-Approved Generator Cold Weather Constraints

The following are circumstances which, if present and confirmed as valid by the Compliance Enforcement Authority, will constitute Generator Cold Weather Constraints:

- *Wind turbine towers that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1.*
- *Heat tracing or other de-icing technologies for wind turbine blades that are not available in the Generator Owner's location.*
- *Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities.*
- *Applying heat to remove accumulated frozen precipitation on solar panels.*
- *Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters.*

Case-by-case Determinations

The following situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the Compliance Enforcement Authority will these circumstances comprise a valid Generator Cold Weather Constraint:

1. *The application of a specific freeze protection measure will void an equipment warranty.*
2. *The application of a specific freeze protection measure is precluded by technical or physical limitations. For example:*
    a. *Installing wind breaks around a cooling tower or air-cooled heat exchanger which requires free airflow for its functionality;*
    b. *Applying freeze control measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system.*
    c. *Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.*

3. *The application of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:*
    a. *The application of freeze protection measures would result in the premature retirement of an existing dispatchable generating unit with no acceptable replacement currently available;*
    b. *The freeze protection measures would be applied to a generating unit that has a previously published retirement date within three years of the Generator Cold Weather Constraint declaration;*

   c. *The application of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit(s);*
   d. *The application of freeze protection measures would reduce the generating unit's ability to provide Real Power and Reactive Power by more than three percent; or*
   e. *The application of freeze protection measures would reduce the summer net dependable capability[14] of the generating unit by more than three percent.*
4. *The application of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.*
5. *Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Cold Weather Critical Components.*

When submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply. An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

The 2024-03 DT chose to utilize a limited and discrete list of pre-approved Generator Cold Weather Constraints as well as a description of other case-by-case situational descriptions that may constitute Generator Cold Weather Constraints. All declared Generator Cold Weather Constraints must be confirmed as valid by the Compliance Enforcement Authority. Nevertheless, the limited and discrete list is intended to describe specific circumstances that, if met, would have a very high probability of being approved. The 2024-03 DT discussed providing clarity with examples (as noted by FERC Order Paragraph 47) knowing that additional instances or conditions that may be considered a Generator Cold Weather Constraint may exist.

Per the FERC Order, NERC staff is responsible to provide a process describing the receipt, evaluation, approval (as needed), and validation of Generator Cold Weather Constraints. This process is captured in the "Generator Cold Weather CAP Extension and Constraint Process" document.

In summary, Attachment 1 contains a list of circumstances that, if confirmed valid by the Compliance Enforcement Authority, are considered to constitute pre-approved Generator Cold Weather Constraints as well as a list of additional situations, circumstances, and criteria that may constitute a Generator Cold Weather Constraint. In utilizing this second list, a Generator Owner must submit to the Compliance Enforcement Authority documentation that defends and supports its declared constraint and describes

[14] "Net dependable capability" refers to the definition used for reporting to the NERC Generating Availability Data System (GADS).

other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply.

Once a declaration is approved by the CEA it is considered valid.

The 2024-03 DT is intentionally leaving room for additional instances of Generator Cold Weather Constraints to be presented as it would be impossible to foresee every potential set of circumstances that could possibly constitute a constraint. Furthermore, the 2024-03 DT wants to ensure that the Standard language supports the development and adoption of new freeze protection measures, practices, methods, or technologies while not immediately requiring that the new freeze protection measures, practices, methods, or technologies be implemented industry-wide. The 2024-03 DT encourages additional study and implementation of freeze protection measures to remove Generator Cold Weather Constraints, as appropriate, over time.

The 2024-03 DT updated the definition of Generator Cold Weather Constraints to provide clarity as directed by FERC. In addition to modifying the definition, the 2024-03 DT developed Attachment 1. Requirement R8 provides entities a clear understanding of what is expected when managing Generator Cold Weather Constraints and directly references use of Attachment 1. The list of "pre-approved" Generator Cold Weather Constraints focuses on technical issues or conditions that are known to exist which may have limited-to-no freeze protection measures available to implement. A Generator Owner is still required to submit "pre-approved" Generator Cold Weather Constraints. The case-by-case determination section of Attachment 1 provides examples of conditions or issues that may constitute a valid Generator Cold Weather Constraint depending on the facts and circumstances. The language provided is meant to be objective, unambiguous, and auditable.

With all Generator Cold Weather Constraints, it is the responsibility of the Generator Owner to provide supporting materials to facilitate approval and validation of the Generator Cold Weather Constraint by the ERO Enterprise. As mentioned in the Requirement R8 Technical Rational discussion, an ERO Enterprise process has been developed to support the FERC directives in the June 2024 FERC Order. The 2024-03 DT believes the new definition of Generator Cold Weather Constraint, updated language throughout the Standard with emphasis on Requirement R8, and the contents of Attachment 1 provides significant clarity to industry on what is expected for Generator Cold Weather Constraints to be considered valid.

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Unofficial Comment Form

Project 2024-03 Revisions to EOP-012-2

Do not use this form for submitting comments. Use the Standards Balloting and Commenting System (SBS) to submit comments on draft one of **EOP-012-3 Extreme Cold Weather Preparedness and Operations** by **8 p.m. Eastern, Tuesday, November 5, 2024.**

Additional information is available on the project page. If you have questions, contact Senior Standards Developer, Ben Wu (via email), or at 470-542-6882.

Background Information

NERC developed the original version of the generator cold weather preparedness Reliability Standard EOP-012-1 in 2022, under Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination. The purpose of this project was to address standards-related recommendations from the Federal Energy Regulatory Commission (FERC)/NERC/Regional Entity staff review of operations during the February 2021 Winter Storm Uri event.

NERC developed Reliability Standard EOP-012-2 in 2023-2024 to address Commission directives from the February 2023 order approving Reliability Standards EOP-012-1 and EOP-011-3.[1] In the February 2023 Order, the Commission directed that NERC revise EOP-012-1 to clarify the applicability of the standard's requirements for generator cold weather preparedness, further define the circumstances under which a Generator Owner may declare that constraints preclude them from implementing one or more corrective actions to address freezing issues, and to shorten the implementation timeline so cold weather reliability risks would be addressed more quickly.

On June 27, 2024, FERC issued an order approving Reliability Standard EOP-012-2.[2] While finding Reliability Standard EOP-012-2 represented an improvement over the prior version and addressed many of its concerns, FERC found the standard requires further improvement to address certain concerns remaining from its February 2023 order. FERC therefore directed NERC to revise the standard in five areas and to submit a revised standard within nine (9) months of the date of the order, or by March 27, 2025.

1 *N. Am. Elec. Reliability Corp.*, 182 ¶ 61,094 (2023) ("February 2023 Order").

2 *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61, 204 (2024) ("June 2024 Order").

Questions

1. In paragraph 47 of the June 2024 Order, FERC directed NERC to revise EOP-012-2 to "ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them." In paragraph 47 of the June 2024 Order, FERC directed NERC to develop and submit modifications to the Generator Cold Weather Constraint definition of Reliability Standard EOP-012-2, to remove the references to "cost," "reasonable cost," "unreasonable cost," and "good business practices" and replace them with criteria that are objective, unambiguous, and auditable. In paragraph 54 of the June 2024 Order, FERC directs NERC to modify EOP-012-2 so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner. In paragraph 94 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R8, Part 8.1 of Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations (more than every five years) to verify that the declaration remains valid.

   The drafting team has done the following to address the FERC directives:
   1. Provided an updated definition of Generator Cold Weather Constraint
   2. Updated language within Requirement R8
   3. Provided EOP-012-3 Attachment 1 for clarity on expectations for registered entities

   Do you agree with the approach and associated language the drafting team chose to meet the directives? Please provide any additional comments to consider. If you do not agree but believe the directives can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

   ☐ Yes
   ☐ No

   Comments:

2. In paragraph 68 of the June 2024 Order, FERC directed NERC to modify Requirement R7 of EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. FERC provided an example for how to address this directive, such as to require shorter timeframes for those units that have experienced issues and allow longer timeframes to address similar potential issues across a fleet for those units that have not experienced issues.

   The drafting team modified Requirement R6 of EOP-012-2 to require a shorter deadline to implement corrective actions for those generating units that experience a Generator Cold Weather Reliability Event. Do you agree with the revised timelines? Please provide any additional

comments to consider. If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team. Please review the posted draft ERO Enterprise document, EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process.

☐ Yes
☐ No

Comments:

3. In paragraph 70 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC.

   The drafting team provided language changes in Requirements R6 and R7 for a Corrective Action Plan extension process. Do you believe that the proposed language changes meet the intent of paragraph 70 of the FERC Order? Please provide any additional comments to consider. If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

   ☐ Yes
   ☐ No

   Comments:

4. In paragraph 72 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to clarify that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

   The drafting team provided updated language in Requirement R2 Part 2.1 to address the issue of units in different stages of design and construction. February 16, 2023 was chosen as a date of demarcation as that was the date the Extreme Cold Weather Temperature was approved by FERC. Do you agree that revisions to Requirement R2 Part 2.1 address this directive? If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

☐ Yes
☐ No

Comments:

5. In paragraph 72 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to clarify that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

   The drafting team provided updated language in Requirement R2 Part 2.2 to address the issue of units in newer stages of design and construction. February 16, 2023 was chosen as a date of demarcation as that was the date the Extreme Cold Weather Temperature was approved by FERC. Units committed to design criteria on or after February 16, 2023 do not have the option to utilize a Corrective Action Plan but may still declare a Generator Cold Weather Constraint. Do you agree that revisions to Requirement R2 Part 2.2 address this directive? If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

   ☐ Yes
   ☐ No

   Comments:

6. In paragraph 76 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to address certain ambiguities by expanding on Requirement R7.1.1 and 7.1.2 to make it clear which corrective action plan implementation deadline applies when a generator owner must implement both remedying issues with existing and installing new freeze protection measures.

   The drafting team clarified Requirement R7 for Corrective Action Plans developed in accordance with Requirements R1, R2, or R3. Do you agree that revisions to Requirement R7 address this directive to differentiate between the existing and new freeze protection measures? If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

   ☐ Yes
   ☐ No

   Comments:

7. The drafting team provided language in the Implementation Plan to address parts 3 through 5 of paragraph 4 of the June 2024 Order addressing FERC's concerns regarding urgency. The Standard language updates were written to meet the core directives in an effective and efficient manner while providing language that is objective, unambiguous, and auditable. With EOP-012-2 already effective October 1, 2024 (with the exception of Requirement R3), the changes made were intended to meet the FERC Directives without adding significantly to the efforts already in progress. Do you agree that the associated Implementation Plan meets the Directives? If you do not agree but believe the Directives can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

   ☐ Yes
   ☐ No

   Comments:

8. Do you agree with the Implementation Plan for EOP-012-3? If you do not agree, please propose an alternate implementation plan with a detailed explanation.

   ☐ Yes
   ☐ No

   Comments:

9. Do you agree that EOP-012-3 is cost effective to address the Directives in the FERC Order? If you do not agree, or if you agree but have suggestions for improvement to enable more cost-effective approaches, please provide your recommendation and, if appropriate, technical, or procedural justification.

   ☐ Yes
   ☐ No

   Comments:

10. Please provide any additional comments for the standard drafting team to consider, if desired.

    Comments:

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Violation Risk Factor and Violation Severity Level Justifications

Project 2024-03 Revisions to EOP-012-2

This document provides the drafting team's (DT's) justification for assignment of violation risk factors (VRFs) and violation severity levels (VSLs) for each requirement in EOP-012-3. Each requirement is assigned a VRF and a VSL. These elements support the determination of an initial value range for the Base Penalty Amount regarding violations of requirements in FERC-approved Reliability Standards, as defined in the Electric Reliability Organizations (ERO) Sanction Guidelines. The DT applied the following NERC criteria and FERC Guidelines when developing the VRFs and VSLs for the requirements.

NERC Criteria for Violation Risk Factors

High Risk Requirement

A requirement that, if violated, could directly cause or contribute to Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

Medium Risk Requirement

A requirement that, if violated, could directly affect the electrical state or the capability of the Bulk Electric System, or the ability to effectively monitor and control the Bulk Electric System. However, violation of a medium risk requirement is unlikely to lead to Bulk Electric System instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor, control, or restore the Bulk Electric System. However, violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to Bulk Electric System instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

Lower Risk Requirement
A requirement that is administrative in nature and a requirement that, if violated, would not be expected to adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor and control the Bulk Electric System; or, a requirement that is administrative in nature and a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor, control, or restore the Bulk Electric System.

FERC Guidelines for Violation Risk Factors

Guideline (1) – Consistency with the Conclusions of the Final Blackout Report

FERC seeks to ensure that VRFs assigned to Requirements of Reliability Standards in these identified areas appropriately reflect their historical critical impact on the reliability of the Bulk-Power System. In the VSL Order, FERC listed critical areas (from the Final Blackout Report) where violations could severely affect the reliability of the Bulk-Power System:

- Emergency operations
- Vegetation management
- Operator personnel training
- Protection systems and their coordination
- Operating tools and backup facilities
- Reactive power and voltage control
- System modeling and data exchange
- Communication protocol and facilities
- Requirements to determine equipment ratings
- Synchronized data recorders
- Clearer criteria for operationally critical facilities
- Appropriate use of transmission loading relief.

Guideline (2) – Consistency within a Reliability Standard
FERC expects a rational connection between the sub-Requirement VRF assignments and the main Requirement VRF assignment.

Guideline (3) – Consistency among Reliability Standards
FERC expects the assignment of VRFs corresponding to Requirements that address similar reliability goals in different Reliability Standards would be treated comparably.

Guideline (4) – Consistency with NERC's Definition of the Violation Risk Factor Level
Guideline (4) was developed to evaluate whether the assignment of a particular VRF level conforms to NERC's definition of that risk level.

Guideline (5) – Treatment of Requirements that Co-mingle More Than One Obligation
Where a single Requirement co-mingles a higher risk reliability objective and a lesser risk reliability objective, the VRF assignment for such Requirements must not be watered down to reflect the lower risk level associated with the less important objective of the Reliability Standard.

NERC Criteria for Violation Severity Levels

VSLs define the degree to which compliance with a requirement was not achieved. Each requirement must have at least one VSL. While it is preferable to have four VSLs for each requirement, some requirements do not have multiple "degrees" of noncompliant performance and may have only one, two, or three VSLs.

VSLs should be based on NERC's overarching criteria shown in the table below:

Lower VSL	Moderate VSL	High VSL	Severe VSL
The performance or product measured almost meets the full intent of the requirement.	The performance or product measured meets the majority of the intent of the requirement.	The performance or product measured does not meet the majority of the intent of the requirement, but does meet some of the intent.	The performance or product measured does not substantively meet the intent of the requirement.

FERC Order of Violation Severity Levels

The FERC VSL guidelines are presented below, followed by an analysis of whether the VSLs proposed for each requirement in the standard meet the FERC Guidelines for assessing VSLs:

Guideline (1) – Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance

Compare the VSLs to any prior levels of non-compliance and avoid significant changes that may encourage a lower level of compliance than was required when levels of non-compliance were used.

Guideline (2) – Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties

A violation of a "binary" type requirement must be a "Severe" VSL.
Do not use ambiguous terms such as "minor" and "significant" to describe noncompliant performance.

Guideline (3) – Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement

VSLs should not expand on what is required in the requirement.

Guideline (4) – Violation Severity Level Assignment Should Be Based on a Single Violation, Not on a Cumulative Number of Violations

Unless otherwise stated in the requirement, each instance of non-compliance with a requirement is a separate violation. Section 4 of the Sanction Guidelines states that assessing penalties on a per violation per day basis is the "default" for penalty calculations.

VRF Justification for EOP-012-3, Requirement R1

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSL Justification for EOP-012-3, Requirement R1

The Drafting Team made non-substantial changes to this Requirement. The VSL did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VRF Justification for EOP-012-3, Requirement R2

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R2			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not have a Corrective Action Plan or a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not have a Corrective Action Plan or a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not have a Corrective Action Plan or a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not have a Corrective Action Plan or a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.

less of its applicable units.	equal to 10% of its applicable units.	equal to 20% of its applicable units.	

VSL Justifications for EOP-012-3, Requirement R2	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	This requirement was modified to capture the difference for generating units for which the Generator Owner first contractually committed to design criteria relevant to this Requirement on or before/after February 16, 2023. The VSL was modified to add Generator Cold Weather Constraint and did not have the unintended consequence of lowering the current level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single	Each VSL is based on a single violation and not cumulative violations.

VSL Justifications for EOP-012-3, Requirement R2	
Violation, Not on A Cumulative Number of Violations	

VRF Justification for EOP-012-3, Requirement R3
The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSL Justification for EOP-012-3, Requirement R3
There is no change to this Requirement. The VSL did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VRF Justification for EOP-012-3, Requirement R4
The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R4			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner created a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable Parts within Requirement R4.	The Generator Owner had and maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.

VSL Justifications for EOP-012-3, Requirement R4	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	There is a word change from "implemented" to "created" in the Lower VSL which did not have the unintended consequence of lowering the current level of compliance. There are no changes to other levels of the VSLs.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R5

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSL Justification for EOP-012-3, Requirement R5

There is no change to this Requirement. The VSL did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VRF Justification for EOP-012-3, Requirement R6

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R6			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner developed and implemented a Corrective Action Plan for a Generator Cold Weather Reliability Event, but it was not developed in accordance with the timeline specified in Requirement R6.	The Generator Owner developed and implemented a Corrective Action Plan for a Generator Cold Weather Reliability Event, but it failed to contain one of the elements in Requirement R6, Part 6.1.	The Generator Owner developed and implemented a Corrective Action Plan for a Generator Cold Weather Reliability Event, but it failed to contain two of the elements in Requirement R6, Part 6.1. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.2 (if applicable), but it did not include one of the elements in Requirement R6, Part 6.2.	The Generator Owner developed a Corrective Action Plan for a Generator Cold Weather Reliability Event, but failed to implement it. OR The Generator Owner developed and implemented a Corrective Action Plan, but failed to contain three or more of the elements in Requirement R6, Part 6.1. OR The Generator Owner did not submit a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.2 (if applicable). OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.2

			(if applicable), but it did not include two or more of the elements in Requirement R6, Part 6.2. OR The Generator Owner did not document in a declaration any Generator Cold Weather Constraint(s), as required by Requirement R6, Part 6.3.

VSL Justifications for EOP-012-3, Requirement R6	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	This Requirement is modified to ensure the that there is a process in place when develop and implement Corrective Action Plans. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

VSL Justifications for EOP-012-3, Requirement R6	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R7

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R7			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner completed selected corrective action(s) in accordance with the 24 and 48 calendar month timelines provided in Requirement R7, Part 7.1 (Part 7.2), but failed to include in its Corrective Action Plan a timetable listing such action(s) in accordance with Requirement R7, Parts 7.1.1-7.1.2.	The Generator Owner included a timetable for implementing the selected corrective action(s) in its Corrective Action Plan in accordance with Requirement R7, Part 7.1 and completed actions in accordance with that timetable (Part 7.2), but it failed to list the updates to the cold weather preparedness plan as required in Requirement R7, Part 7.1.3.	The Generator Owner included in its Corrective Action Plan a timetable for implementing the selected corrective actions, completed actions in accordance with that timetable (Part 7.2), and submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.3 when the timetables for completion were projected to exceed the timelines in Part 7.1, but its request did not include one	The Generator Owner included in its Corrective Action Plan a timetable for implementing the selected corrective actions, completed actions in accordance with that timetable (Part 7.2), and submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.3 when the timetables for completion were projected to exceed the timelines in Part 7.1, but its request did not

		of the elements in Requirement R7, Part 7.3.	include two or more of the elements in Requirement R7, Part 7.3. OR The Generator Owner included in its Corrective Action Plan a timetable for implementing the selected corrective actions, and completed actions in accordance with that timetable (Part 7.2), but failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable). OR The Generator Owner failed to complete corrective action(s) described in the Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) that preclude the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.

VSL Justifications for EOP-012-3, Requirement R7	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended	The modification to make sure that Each Generator Owner shall have dated evidence that demonstrates it implemented each Corrective Action Plan, including updating actions or timetables, or has explained in a declaration why corrective actions are not being implemented in accordance with Requirement R7. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.

VSL Justifications for EOP-012-3, Requirement R7	
Consequence of Lowering the Current Level of Compliance	
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R8

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R8			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner submitted a Generator Cold Weather Constraint in accordance with Requirement R8, Part 8.1, but did not do so within the specified timeframe.	The Generator Owner failed to comply with one of the elements in Requirement R8, Parts 8.2 through 8.4.	The Generator Owner failed to comply with two of the elements in Requirement R8, Parts 8.2 through 8.4.	The Generator Owner failed to comply with three of the elements in Requirement R8, Parts 8.2 through 8.4. OR The Generator Owner declared but failed to submit a Generator Cold Weather Constraint in accordance with Requirement R8, Part 8.1.

VSL Justifications for EOP-012-3, Requirement R8	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The Drafting Team added Lower VSL and Moderate VSL to enforce that the Generator Owner should submit a Generator Cold Weather Constraint in accordance with Requirement R8, Part 8.1 within the specified timeframe and must comply with Requirement R8, Parts 8.2 through 8.4. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

VSL Justifications for EOP-012-3, Requirement R8	
Level Assignments that Contain Ambiguous Language	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Directives from FERC June 2024 Order Approving EOP-012-2 and Directing Further Revisions

Project 2024-03 Revisions to EOP-012-2

Summary

This mapping document summarizes how the drafting team considered FERC's directives for further revisions to Reliability Standard EOP-012-2 in its June 27, 2024 approval order[1] when drafting proposed EOP-012-3.

Paragraph 47 – Address Ambiguities Regarding the term Generator Cold Weather Constraint and Criteria

Directive:

"Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit to the Commission for approval modifications to proposed Reliability Standard EOP-012-2 that address concerns related to the ambiguity of the newly defined Generator Cold Weather Constraint term and criteria. Specifically, we direct NERC to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective *and* sufficiently detailed so that applicable entities understand what is required of them. One approach to satisfy this directive could be to incorporate into the proposed Reliability Standard a limited and discrete list of circumstances that would qualify as acceptable constraints. We note that NERC's technical rationale document, created by NERC's Standard Drafting Team and included in NERC's filing, includes a list of technical constraints that could serve as a starting point for a list of circumstances that would qualify as acceptable constraints. To the extent that NERC continues to believe that the extent of industry adoption for winterization technologies should be a criterion for declaring a constraint, NERC should clearly explain in its filing how it will assess the extent of such adoption in a way that provides for consistent compliance and enforcement outcomes. Alternatively, NERC could establish a pre-approval process for all Generator Cold Weather Constraint declarations. While a clearly defined list may be preferable, a pre-approval process could be established to ensure entities' declared Generator Cold Weather Constraints are appropriate and can be supported and defended. Further, as part of the directive to develop and submit modifications to the Generator Cold Weather Constraint definition of proposed Reliability Standard

[1] *N. Am. Elec. Reliability Corp.*., 187 FERC ¶ 61,204 (2024) ("June 2024 Order"). In this document, internal citations included within the cited text of the FERC order are omitted.

EOP-012-2, we direct NERC, pursuant to section 215(d)(5) of the FPA, to remove the references to "cost," "reasonable cost," "unreasonable cost," and "good business practices" and replace them with criteria that are objective, unambiguous, and auditable. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
Generator Cold Weather Constraint - Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions. Criteria used to determine a constraint include practices, methods, or technologies which, given the exercise of reasonable judgment in light of the facts known at the time the decision to declare the constraint was made: • Were not broadly implemented at generating units for comparable unit types in regions that experience similar winter climate conditions to provide reasonable assurance of efficacy;	**Generator Cold Weather Constraint** - Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. *** **R8.** Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: **8.1.** Submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 days of determining that the Generator Cold Weather Constraint is applicable. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit the Generator Cold Weather Constraint declaration(s) no later than 15 days after commercial operation; **8.2.** Review any Generator Cold Weather Constraint declaration validated by the CEA	The DT removed all of the references to "reasonable cost," "unreasonable cost," "cost," and "good business practices" within the definition of Generator Cold Weather Constraint. The definition of Generator Cold Weather Constraint now refers generally to a condition that would preclude implementing freeze protection measures. Instead, the DT developed Attachment 1, referenced in Requirement R8, to define the criteria by which a valid Generator Cold Weather Constraint may exist. Attachment 1 consists of: 1. Pre-Approved Generator Cold Weather Constraints, consisting of circumstances which, if present and confirmed as valid by the Compliance Enforcement Authority, would constitute Generator Cold Weather Constraints; and 2. Case-by-case Determinations of Generator

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
• Could not have been expected to accomplish the desired result; or Could not have been implemented at a reasonable cost consistent with good business practices, reliability, or safety. A cost may be deemed "unreasonable" when implementation of selected freeze protection measure(s) are uneconomical to the extent that they would require prohibitively expensive modifications or significant expenditures on equipment with minimal remaining life. *** **R8.** Each Generator Owner that creates a Generator Cold Weather Constraint declaration shall: **8.1**. Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and **8.2**. Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable.	every 24 calendar months to determine if it remains valid under Attachment 1; **8.3** Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable; and **8.4** If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with the timetables in Requirement R6 Part 6.1 or Requirement R7 Part 7.1, to begin from the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid. *** **Attachment 1** (criteria for determining the applicability of a Generator Cold Weather Constraint) (*see draft standard*)	Cold Weather Constraints, consisting of situations which may constitute Generator Cold Weather Constraints, depending on the specific facts and circumstances. Only upon approval by the Compliance Enforcement Authority would these circumstances comprise a valid Generator Cold Weather Constraint under Requirement R8. Attachment 1 provides significant clarity on the conditions or issues that may constitute a valid Generator Cold Weather Constraint. The criteria are intended to be objective, unambiguous, and auditable. The standard retains flexibility to address potentially valid constraints that are not specifically defined in the standard through the Compliance Enforcement Authority review process.

Paragraph 54: Address Concerns Regarding the Need for a Timely Review and Evaluation of Declared Generator Cold Weather Constraints by NERC

Directive

"Accordingly, we again direct NERC, pursuant to section 215(d)(5) of the FPA, to modify proposed Reliability Standard so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner. We also direct NERC to include in its compliance filing, a plan to timely review such declarations to verify compliance with proposed Reliability Standard EOP-012-2 and its successors or obligations in a corrective action plan and take corrective action where necessary. For example, modifying Standard to require the generator owners to provide declarations (or changes to the declarations) to NERC within 45 days. It is up to NERC whether it would like to delegate this task to the relevant Regional Entities. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R8. Each Generator Owner that creates a Generator Cold Weather Constraint declaration shall: **8.1**. Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and **8.2**. Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable.	**R8.** Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: **8.1.** Submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 days of determining that the Generator Cold Weather Constraint is applicable. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit the Generator Cold Weather Constraint declaration(s) no later than 15 days after commercial operation;	Requirement R8 would require the Generator Owner declaring a Generator Cold Weather Constraint in accordance with Attachment 1 to submit that constraint to its Compliance Enforcement Authority within 45 days of determining that a Generator Cold Weather Constraint is applicable (for new units, this time is within 15 days of entering commercial operation). This requirement helps ensure the timely submission of constraints to the Compliance Enforcement Authority, which may be NERC or the Regional Entity, for review and approval.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	8.2. Review any Generator Cold Weather Constraint declaration validated by the CEA every 24 calendar months to determine if it remains valid under Attachment 1; **8.3** Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable; and **8.4** If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with the timetables in Requirement R6 Part 6.1 or Requirement R7 Part 7.1, to begin from the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid. *** **Attachment 1** (criteria for determining the applicability of a Generator Cold Weather Constraint) (*see draft standard*)	Attachment 1 contains a list of pre-approved Generator Cold Weather Constraints as well as a list of situations, circumstances, and criteria that may constitute a Generator Cold Weather Constraint for which a Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply to the CEA for approval. If the Generator Cold Weather Constraint is determined to be invalid by the CEA, the Generator Owner must update its Corrective Action Plan and implement according to the standard timelines, beginning from the date of notification. As NERC and the Regional Entities are not users, owners, nor operators of the BPS, provisions for the timeliness of CEA review are not included in EOP-012-3. Additional support and detail for how the CEA will review constraints in a timely manner consistent with the FERC directive is provided in the constraint review process.

Paragraph 68 - Address Concerns that Existing EOP-012-2 Requirement R7 Allows Too Long for Entities to Implement Corrective Actions for Existing or New Equipment or Freeze Protection Measures for those Generating Units that Experience a Generator Cold Weather Reliability Event

Directive:
"Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. Based on compliance with Requirements R2 and R3, those generating units should have already had appropriate freeze protection measures implemented to be capable of operating at the generating units' respective Extreme Cold Weather Temperature. Therefore, we find that a shorter timeframe to implement corrective actions that address existing or new equipment or freeze protection measures is appropriate. For example, to satisfy this directive, NERC could require generator owners to implement corrective actions prior to the next winter season for generating units that experience a Cold Weather Reliability Event and to complete freeze protection measures on similar equipment on all of its fleet within 24 months of becoming aware of the freeze issue. For corrective action plans that involve larger and more complicated implementations, NERC could incorporate a staggered 48-month corrective action plan implementation deadline."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R6. Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed	**R6.** Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop and implement a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed before the first day	To address this directive, the drafting team revised Requirement R6 to specify shorter implementation timeframes at generating units experiencing a Generator Cold Weather Event, and removed references to this requirement under Requirement R7, which previously addressed all Corrective Action Plans developed under the EOP-012 standard. For Generator Owners experiencing a Generator Cold Weather Event, Corrective Action Plans

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
within 150 days or by July 1, whichever is earlier, and contain at a minimum: **6.1.** A summary of the identified cause(s) for the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data; **6.2.** A review of applicability to similar equipment at generating units owned by the Generator Owner; and **6.3.** An identification of operating limitations or impacts to the cold weather preparedness plan that would apply until execution of the corrective action(s) identified in the Corrective Action Plan. **R7**. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, R3, or R6, shall: **7.1**. Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1**. List the action(s) which address(es) existing equipment or freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan; **7.1.2**. List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar months of completing development of the Corrective Action Plan; and	of July, but not more than 150 days after the Generator Cold Weather Reliability Event. The Generator Owner shall: **6.1**. Ensure the Corrective Action Plan contains at a minimum: **6.1.1.**A summary of the identified cause(s) for the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data; **6.1.2.** A list of actions to add new or remedy issues with existing freeze protection measures; **6.1.3.** An identification of operating limitations or impacts to the cold weather preparedness plan that would apply until execution of the corrective action(s) identified in the Corrective Action Plan; **6.1.4.** A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required; **6.1.5.** A timetable specifying that implementation of the Corrective Action Plan shall be completed prior to the first day of December following the Generator Cold Weather Reliability Event[fn10]; and **6.1.6.** A review of applicability to similar equipment freeze protection measures at	must specify implementation of corrective actions at the affected unit (i.e. the one experiencing the event) by no later of December 1 following the event. For events occurring early in the season (i.e. prior to December 1), corrective actions shall be implemented prior to December 1 of the year following the event. Recognizing that similar units may be subject to similar issues, Generator Owners must still perform a review of applicability to similar equipment at their other units. Revised Requirement R7 would allow the entity to perform this review and implement any corrective measures within 24 calendar months of the Generator Cold Weather Reliability Event. To the extent circumstances beyond the control of the Generator Owner prevent implementation within these timeframes, Requirement R6 Part 6.2 provides a process by which the Generator Owner may seek an extension from the CEA. This process is similar to that included in Requirement R7, discussed more fully in the following section.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
7.1.3. List the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; **7.2**. Implement the Corrective Action Plan in accordance with the specified timetables in Requirement R7 Part 7.1; **7.3**. Update the Corrective Action Plan action(s) and timetable(s), with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and **7.4**. Document in a declaration, with justification, any Generator Cold Weather Constraint that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.	generating units owned by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of the Generator Cold Weather Reliability Event; **6.2.** Update the Corrective Action Plan action(s) and timetable(s), with justification, and submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 6.1. The submitted Corrective Action Plan extension request shall include the following; **6.2.1.**Circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner; **6.2.2.**Revisions to the selected actions in Part 6.1, if any, including utilization of Operating Procedures, if applicable; and **6.2.3.**Updated timetable for implementing the selected actions in Part 6.1. **6.3.** Document in a declaration, with justification, any Generator Cold Weather Constraint in accordance with Requirement R8, if applicable, that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.	

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	[10]: For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year. **R7.** Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, or R3 shall, as applicable: **7.1.** Include a timetable for implementing the selected corrective action(s) that shall: ****	

Paragraph 70: Address the Finding that Any Extensions of a Corrective Action Plan Implementation Deadline Beyond the Maximum Implementation Timeframe Provided by the Standard be Pre-Approved by NERC

Directive

"Therefore, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC. This approach is consistent with prior Commission action in Order No. 851 where the Commission directed NERC to require pre-approval for extensions beyond the timelines required in the Reliability Standard. In Order No. 851, the Commission explained that although case-by-case extension determinations may be more uncertain or have associated burdens, the more compelling imperative is that automatic extensions have the potential for abuse by unduly delaying mitigation, and would lead to delayed visibility for NERC."

See also P 3 (summarizing directives): "[W]e direct NERC to:… develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the Standard is pre-approved by NERC and to ensure that the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R6. Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability	**R6.** Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop and implement a Corrective Action Plan when the generating unit experiences a Generator	To address this directive, the drafting team has added new Requirement R6, Part 6.2, and Requirement R7 Part 7.3 to require any Generator Owner seeking to extend a Corrective Action Plan implementation deadline beyond the maximum implementation timeframe required by the standard seeks pre-approval of the extension by the Compliance Enforcement Authority. This language is similar to that used in

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
Event. The Corrective Action Plan shall be developed within 150 days or by July 1, whichever is earlier, and contain at a minimum: **6.1.** A summary of the identified cause(s) for the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data; **6.2.** A review of applicability to similar equipment at generating units owned by the Generator Owner; and **6.3.** An identification of operating limitations or impacts to the cold weather preparedness plan that would apply until execution of the corrective action(s) identified in the Corrective Action Plan. *** **R7**. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, R3, or R6, shall: **7.1**. Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1**. List the action(s) which address(es) existing equipment or freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan; **7.1.2**. List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar	Cold Weather Reliability Event. The Corrective Action Plan shall be developed before the first day of July, but not more than 150 days after the Generator Cold Weather Reliability Event. The Generator Owner shall: **6.1**. Ensure the Corrective Action Plan contains at a minimum: **6.1.1.**A summary of the identified cause(s) for the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data; **6.1.2.** A list of actions to add new or remedy issues with existing freeze protection measures; **6.1.3.** An identification of operating limitations or impacts to the cold weather preparedness plan that would apply until execution of the corrective action(s) identified in the Corrective Action Plan; **6.1.4.** A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required; **6.1.5.** A timetable specifying that implementation of the Corrective Action Plan shall be completed prior to the first day of December following the Generator Cold Weather Reliability Event[fn10]; and	the TPL-007 standard, and the ERO Enterprise would follow a similar review process. With respect to that part of Paragraph 3 relating to "ensuring the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension": Under EOP-012-3 Requirement R6 Part 6.1.3, pertaining to units experiencing a Generator Cold Weather Event, the Generator Owner would be required to identify operating limitations that would apply until execution of the Corrective Action Plan. Under EOP-012-3 Requirements R2 and R3, a Corrective Action Plan would be required where the Generator Owner cannot meet the required operational capability for its unit. The TOP-003 and IRO-010 standards require the Transmission Operator, Balancing Authority, and Reliability Coordinator to maintain data specifications for their real-time and operational planning analyses that include provisions for notification of BES generating unit(s) status during local forecasted cold weather to include operating limitations based on capability and availability, among other factors. These

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
months of completing development of the Corrective Action Plan; and **7.1.3**. List the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; **7.2**. Implement the Corrective Action Plan in accordance with the specified timetables in Requirement R7 Part 7.1; **7.3**. Update the Corrective Action Plan action(s) and timetable(s), with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and **7.4**. Document in a declaration, with justification, any Generator Cold Weather Constraint that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.	**6.1.6.** A review of applicability to similar equipment freeze protection measures at generating units owned by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of the Generator Cold Weather Reliability Event; **6.2.** Update the Corrective Action Plan action(s) and timetable(s), with justification, and submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 6.1. The submitted Corrective Action Plan extension request shall include the following; **6.2.1.**Circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner; **6.2.2.**Revisions to the selected actions in Part 6.1, if any, including utilization of Operating Procedures, if applicable; and **6.2.3.**Updated timetable for implementing the selected actions in Part 6.1. **6.3.** Document in a declaration, with justification, any Generator Cold Weather Constraint in accordance with Requirement R8, if applicable, that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.	standards require the Generator Owner to provide the requested data. After considering these standards, the drafting team determined that no additional requirement would be needed to ensure the "generator owner informs relevant registered entities of operating limitations in extreme cold weather" specifically during the period of Corrective Action Plan extension. To the extent a Transmission Operator, Balancing Authority, or Reliability Coordinator would find the additional detail useful, it may request this information as part of its data specifications, and the Generator Owner would be required to provide it.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	Fn10: For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year. **R7.** Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, or R3 shall, as applicable: **7.1.** Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1.** List the action(s) which remedy(ies) issues with existing freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan, regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures; **7.1.2**. List the action(s) which require(s) new freeze protection measures, if any, to be completed within 48 calendar months of completing development of the Corrective Action Plan; and **7.1.3**. Describe the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures.	

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	7.2. Complete all actions described in the Corrective Action Plan in accordance with the specified timetables in Part 7.1; **7.3**. Submit a Corrective Action Plan extension request, for the approval of the CEA, where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 7.1. The submitted request shall: **7.3.1** Explain the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner; **7.3.2** Include, as applicable, revisions to the selected actions in Part 7.1, including utilization of Operating Procedures; and **7.3.3** Include an updated timetable for implementing the selected actions in Part 7.1. **7.4**. Document in a declaration, with justification, any Generator Cold Weather Constraint in accordance with Requirement R8 that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.	

Paragraph 72: Address the Finding that Generators that are First Commercially Operational on or after October 1, 2027, Should Have Freeze Protection Measures Either Designed into Their Generating Systems, or, if a Corrective Action Plan is Needed, then It Should be Completed by the Time that Such Generating Units Go into Commercial Operation.

Directive

"We thus find that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to clarify that any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R2. Applicable to generating units with a commercial operation date on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), shall: • Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum	**R2.** Applicable to generating units which begin commercial operation on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), shall: **2.1** For generating units for which the Generator Owner first contractually committed to design criteria relevant to this Requirement before February 16, 2023:	To address this directive, the drafting team revised Requirement R2 which pertains to units going into commercial operation after October 1, 2027 to separate requirements for units that are truly "new" and should have more robust capabilities designed in without need for corrective actions, and units that may have already been significantly far along in the design phase and for whom full compliance at the time of entering commercial operation (which may be after the in-service date) would represent a significant hardship. In considering this directive, the drafting team considered that the 2021-07 drafting team recommended this requirement apply to

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
operational duration for intermittent energy resources if less than twelve (12) continuous hours; or • Develop a Corrective Action Plan(s) to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours.	• Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or • Have a Corrective Action Plan(s) in place (to include any applicable Generator Cold Weather Constraint(s) upon beginning commercial operation, to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours. **2.2** For generating units for which the Generator Owner first contractually committed to design criteria relevant to this Requirement on or after February 16, 2023:	generation going into service three (3) years after the effective date of EOP-012-1 (i.e., based on October 1, 2024 that date is October 1, 2027). The 2021-07 drafting team believed, and the Project 2024-03 agrees, that there needs to be allowances made for units that are far along in the development process. While not changing the October 1, 2027 date, the drafting team has proposed a means to accommodate these units while overall raising the bar for reliability. For units that were designed prior to February 2023, which is when the definition of ECWT was approved in EOP-012-1, entities may implement a Corrective Action Plan to meet the more stringent capability requirements applicable to new generation in Requirement R2. Prior to this time, entities would not have been on notice of their future obligations, and thus may not have accounted for it in their designs. A Corrective Action Plan would allow them to enter commercial operation and meet the more stringent requirements in accordance with the implementation timeframes in Requirement R7. For units that are or were designed after that point, entities must either meet the requirements or, if meeting the requirements is not possible, declare a Generator Cold Weather Constraint in accordance with Requirement R8.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	• Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or • Document in a declaration, with justification, as applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.	

Paragraph 76: To Address Concerns that EOP-012-2 Requirement R7 has Ambiguities in the Implementation Plan Timelines that Apply to Certain Generator Owners

Directive

"We believe that proposed Reliability Standard EOP-012-2, Requirement R7's corrective action plan implementation deadlines have remaining ambiguities that need to be addressed. As noted above, the Commission has previously expressed similar concerns regarding the vagueness and enforceability of Reliability Standards language. Specifically, we agree with the concerns raised by the ISO/RTO Council that Requirement R7 of proposed Reliability Standard EOP-012-2 does not provide clear direction as to the required corrective action plan implementation timeline that applies to certain generator owners. For example, it is unclear how the corrective action plan implementation timeline would apply if a generator owner had combinations of both existing and new equipment for freeze protection measures. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to address these ambiguities by expanding on Requirement R7.1.1 and 7.1.2 to make it clear which corrective action plan implementation deadline applies to which generator owner."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R7. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, R3, or R6, shall: **7.1**. Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1**. List the action(s) which address(es) existing equipment or freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan; **7.1.2**. List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar	**R7.** Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, or R3 shall, as applicable: **7.1.** Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1.** List the action(s) which remedy(ies) issues with existing freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan, regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures;	To address this directive, the drafting team added "regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures" at the end of Requirement R7 Part 7.1.1.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
months of completing development of the Corrective Action Plan; and **7.1.3**. List the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; ***	**7.1.2**. List the action(s) which require(s) new freeze protection measures, if any, to be completed within 48 calendar months of completing development of the Corrective Action Plan; and **7.1.3**. Describe the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures. ***	

Paragraph 94: To address the concern that Generator Cold Weather Constraint Declarations Should be Reviewed More Frequently than Once Every Five Years to Ensure the Constraint Remains Valid

Directive

"We agree with the ISO/RTO Council that the proposed five-year review period for the declared Generator Cold Weather Constraints in Requirement R8.1 could delay the identification and adoption of new freeze protection measures and does not represent the current pace of technological advancements. We acknowledge that a more frequent review does impose some additional administrative burden to the generator owner to review the technological advancements that hindered its ability to winterize; nonetheless, a lengthy period between a Generator Cold Weather Constraint declaration review by the generator owner offers little incentive to timely adopt new freeze protection technologies. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R8, Part 8.1 of proposed Reliability Standard EOP 012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations to verify that the declaration remains valid. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R8. Each Generator Owner that creates a Generator Cold Weather Constraint declaration shall: **8.1**. Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and **8.2**. Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable.	**R8.**Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: **8.1.**Submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 days of determining that the Generator Cold Weather Constraint is applicable. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit the Generator Cold Weather Constraint declaration(s) no later than 15 days after commercial operation;	To address this directive, the drafting team revised Requirement R8 to require review of all validated Generator Cold Weather Constraints at least once every 24 calendar months to ensure the constraint remains valid. Language regarding reviews "as needed when a change of status" occurs was removed due to the more frequent periodicity.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	8.2. Review any Generator Cold Weather Constraint declaration validated by the CEA every 24 calendar months to determine if it remains valid under Attachment 1; *** **Attachment 1** (criteria for determining the applicability of a Generator Cold Weather Constraint) (*see draft standard*)	

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EOP-012-3

Generator Cold Weather CAP Extension and Constraint Process

Background

This Electric Reliability Organization (ERO) Generator Cold Weather Corrective Action Plan (CAP) Extension and Constraint Process document addresses how ERO Enterprise staff will review generator cold weather CAP extensions and Constraints developed under Reliability Standard EOP-012-3 Requirements R6, R7, R8 and Attachment 1 to ensure a timely, structured, and consistent approach to CAP extension and Constraint submittals and processing.

NERC Compliance Assurance & Certification will maintain this document under existing ERO Enterprise processes. This document will be reviewed and updated by NERC Compliance Assurance & Certification, as needed.

CAP Extension Request Review Process

Process Overview

If a registered entity (entity) has determined that a Corrective Action Plan (CAP) developed in accordance With EOP-012-3 Requirements R6 or R7 cannot meet the timetable provided per R6 Part 6.1 or R7 Part 7.1, then the entity will submit an extension request to the ERO Enterprise for approval no less than 60 days prior to the original required CAP completion date.

The steps outlined here should be followed to ensure a timely, structured, and consistent approach to extension request submittals and processing.

The entity will work with the Regional Entity designated as its Compliance Enforcement Authority (CEA) as outlined in this process. The entity submitting the extension request will be referred to as the 'submitting entity' and may represent only itself or multiple registered entities who have developed a joint extension request. The submitting entity is responsible for ensuring all registered entities who are jointly submitting the extension request are listed in the requested information below and for distributing any communications from its CEA to the other entities that are part of the joint extension request. If a joint extension request is submitted for multiple registered entities who have different Regional Entities designated as the CEA, the submitting entity's CEA will perform the steps outlined in this process and will be responsible for coordinating with the Regional Entity(ies) that are the designated CEA for the additional entities party to the joint extension request.

For entities in Coordinated Oversight, the CEA for this process is the Lead Regional Entity (LRE). The LRE will coordinate with the Affected Regional Entity(ies) (ARE) and the AREs may participate in the joint review as well.

Step 1 – Registered Entity Submittal

If an entity determines that it cannot meet the required timetable for completing a CAP, the submitting entity will contact their CEA to coordinate submittal of an extension request. The submitting entity will submit the requisite data to their CEA through Align and the Secure Evidence Locker (SEL) as needed or other process tools as determined by the CEA.

Entities are encouraged to submit the extension request as soon as they are aware they will not meet the CAP completion date but no later than 60 days before the original required completion date. It is the submitting entity's responsibility to ensure that all information detailed in EOP-012-3 Part 6.2 or Part 7.3 and requested in Align is provided in the entity's extension request to facilitate the review.

Step 2 – ERO Enterprise Review

The CEA will acknowledge receipt of the submission in writing (either through ALIGN or email) within 15 days and verify that all information detailed in EOP-012-3 Part 6.2 or Part 7.3 as required is provided in the submitting entity's extension request submittal. The CEA will work with the submitting entity to provide any missing information. The CEA will notify NERC of the extension request submittal and provide all associated information when acknowledging receipt of the submission.

The CEA will then perform a joint review of (1) the circumstances beyond the control of the entity preventing implementation of the CAP within the identified timetable; (2) the revisions to the selected actions in the CAP; and (3) the updated timetable for implementing the selected actions[1]. Any additional information requested to support the extension request review will be coordinated with the submitting entity by the CEA. The CEA will complete the review within 45 days of acknowledgement or provide notification to the submitting entity that they are extending the time needed for review.

Examples of circumstances beyond the control of the responsible entity include, but are not limited to:

- Delays resulting from regulatory/legal processes, such as permitting.
- Delays resulting from stakeholder processes required by tariff.
- Delays resulting from equipment lead times; or
- Delays resulting from unit outages being denied.

Due diligence in ordering equipment, obtaining permits, scheduling outages, etc., will be considered as part of the determination of whether a particular set of facts constitute circumstances beyond the control of the entity.

Step 3 – Registered Entity Notification

The CEA will communicate the approval or denial of the extension request or continuation of the time needed to review the extension request in writing to the submitting entity including the rationale for the determination. For any continuation of the review, the CEA will also provide the submitting entity with a

[1] NERC may choose to participate in any review at its own discretion or at the request of the CEA.

revised timeline for when the determination will be provided. If an extension request is denied, the selected actions in the Corrective Action Plan need to be completed in accordance with the original timetables.

Step 4 – Reporting to NERC

Quarterly, the CEA will send NERC a report that, at a minimum, includes each extension request, whether the request was approved or denied, and the CEA's rationale for its decision.

Constraint Review Process

Process Overview

If a registered entity (entity) has determined that a Generator Cold Weather Constraint, developed in accordance with Standard EOP-012-3 Attachment 1, is required this process shall be followed to ensure a timely, structured, and consistent approach.

The entity will work with the Regional Entity designated as its CEA to submit the Generator Cold Weather Constraint, with supporting documentation, to the ERO Enterprise for review, evaluation, approval (as needed), and validation as outlined in this process. The entity submitting the Generator Cold Weather Constraint(s) will be referred to as the 'submitting entity' and may represent itself or multiple registered entities under the same ownership with the same Generator Cold Weather Constraint. The submitting entity is responsible for ensuring all registered entities included are listed in the requested information and is for distributing any communications from its CEA to the other entities that are part of the Generator Cold Weather Constraint. If a Generator Cold Weather Constraint is submitted for multiple registered entities under the same ownership who have different Regional Entities designated as the CEA, the submitting entity's CEA will perform the steps outlined in this process and will be responsible for coordinating with the Regional Entity(ies) that are the designated CEA for the additional entities party to the Generator Cold Weather Constraint.

For entities in Coordinated Oversight, the CEA for this process is the Lead Regional Entity (LRE). The LRE will coordinate with the Affected Regional Entity(ies) (ARE) and the AREs may participate in the joint review as well.

Step 1 – Registered Entity Submittal

If an entity determines that it meets the required Generator Cold Weather Constraint language within Attachment 1, the submitting entity will contact their CEA to coordinate submittal of the Generator Cold Weather Constraint. The submitting entity will submit the requisite data to their CEA through Align and the Secure Evidence Locker or other process tools as determined by the CEA.

Entities are encouraged to submit the Generator Cold Weather Constraint as soon as they are aware they will meet the Generator Cold Weather Constraint language within Attachment 1 but are required to meet

EOP-012-3 Requirement R8[2]. Early submittal is requested to allow the ERO Enterprise time to review, evaluate, and validate or approve the Generator Cold Weather Constraint.

It is the submitting entity's responsibility to ensure that all information detailed in EOP-012-3 R8 and Attachment 1 is provided in the entity's submittal to facilitate the ERO Enterprise review. The submitting entity should review language within Attachment 1 and identify, in the submittal, if the Generator Cold Weather Constraint is a pre-approved Generator Cold Weather Constraint or a Generator Cold Weather Constraint requiring further review for approval.

Step 2 – ERO Enterprise Review

The CEA will acknowledge receipt of the submission in writing (either through Align or email) within 15 business days and verify that all information detailed in EOP-012-3 R8 and Attachment 1 is provided in the submitting entity's submittal. The CEA will work with the submitting entity to provide any missing information. The CEA will notify NERC of the Generator Cold Weather Constraint submittal (either through Align or via email) when acknowledging receipt of the submission.

The CEA will review the Generator Cold Weather Constraint submittal and supporting information[3]. Any additional information requested to support the Generator Cold Weather Constraint review, evaluation, and validation or approval will be coordinated with the submitting entity by the CEA. The CEA will complete the review within 10 business days of submittal receipt confirmation for pre-approved Generator Cold Weather Constraint and 45 business days of submittal receipt confirmation for those Generator Cold Weather Constraint requiring further review for approval or provide notification to the submitting entity that they are extending the time needed to review[4].

The determination whether to approve the case-by-case Generator Cold Weather Constraint will be based on the specific facts and circumstances provided by the submitting entity that defends and supports the declared constraint under one of the five identified situations in EOP-012-3 Attachment 1.

Step 3 – Registered Entity Notification

The CEA will communicate the validation, approval, or denial of the Generator Cold Weather Constraint or continuation of the time needed to review the Generator Cold Weather Constraint in writing (via Align or email) to the submitting entity including the rationale for the determination. For any continuation of the review, the CEA will also provide the submitting entity with a revised timeline for when the determination will be provided. Denial of a Generator Cold Weather Constraint requires the entity to update its Corrective Action Plan(s) with corrective actions that will be completed within the timetables in Requirement R6 Part 6.1 or Requirement R7 Part 7.1 to begin from the date the Generator Owner is notified that the Generator

[2] Per EOP-012-3 R8.1, the Generator Owner must submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 days of determining that the Generator Cold Weather Constraint is applicable for in-service units. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, the Generator Owner must submit the Generator Cold Weather Constraint declaration(s) no later than 15 days after commercial operation.

[3] NERC may choose to participate in any review at its own discretion or at the request of the CEA.

[4] If a large number of entities submit Generator Cold Weather Constraints at the same time (especially those tied to initial performance expectations as set in the EOP-012-3 Implementation Plan), the ERO Enterprise anticipates additional time will be needed to accommodate these initial reviews.

Cold Weather Constraint is invalid. Communication efforts between the submitting entity and the CEA related to updates of the Corrective Action Plan and timetables resulting from a denial of a Generator Cold Weather Constraint are strongly encouraged.

Step 4 – Reporting to NERC

Quarterly, the CEA will send NERC a report that, at a minimum, includes each Generator Cold Weather Constraint request received, whether the request was validated, approved, or denied, and the CEA's rationale for its decision.

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Calculating Extreme Cold Weather Temperature

RELIABILITY | RESILIENCE | SECURITY




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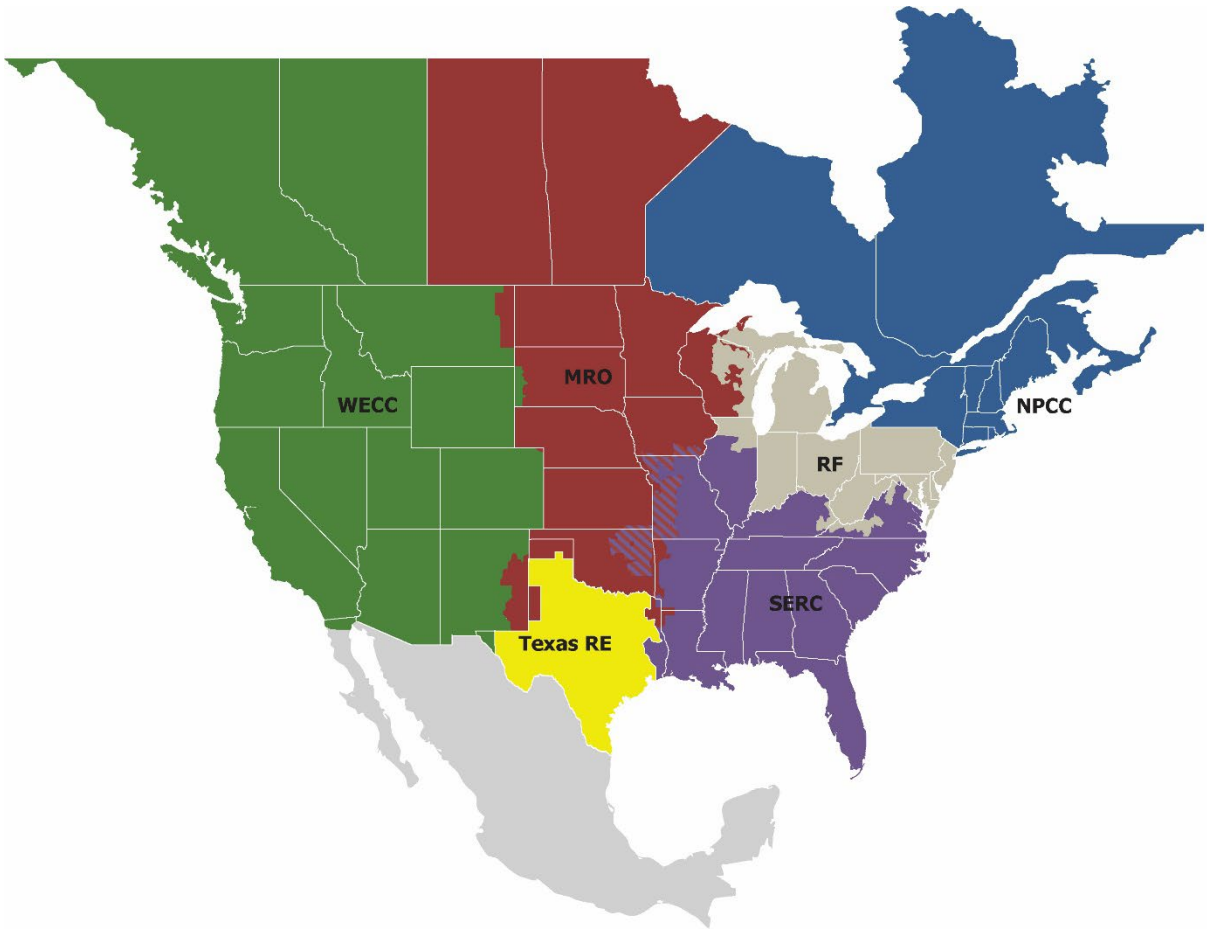
Preface

Electricity is a key component of the fabric of modern society and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of NERC and the six Regional Entities, is a highly reliable, resilient, and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

Reliability | Resilience | Security
Because nearly 400 million citizens in North America are counting on us

The North American BPS is made up of six Regional Entity boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one Regional Entity while associated Transmission Owners/Operators participate in another.



MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	WECC

Introduction

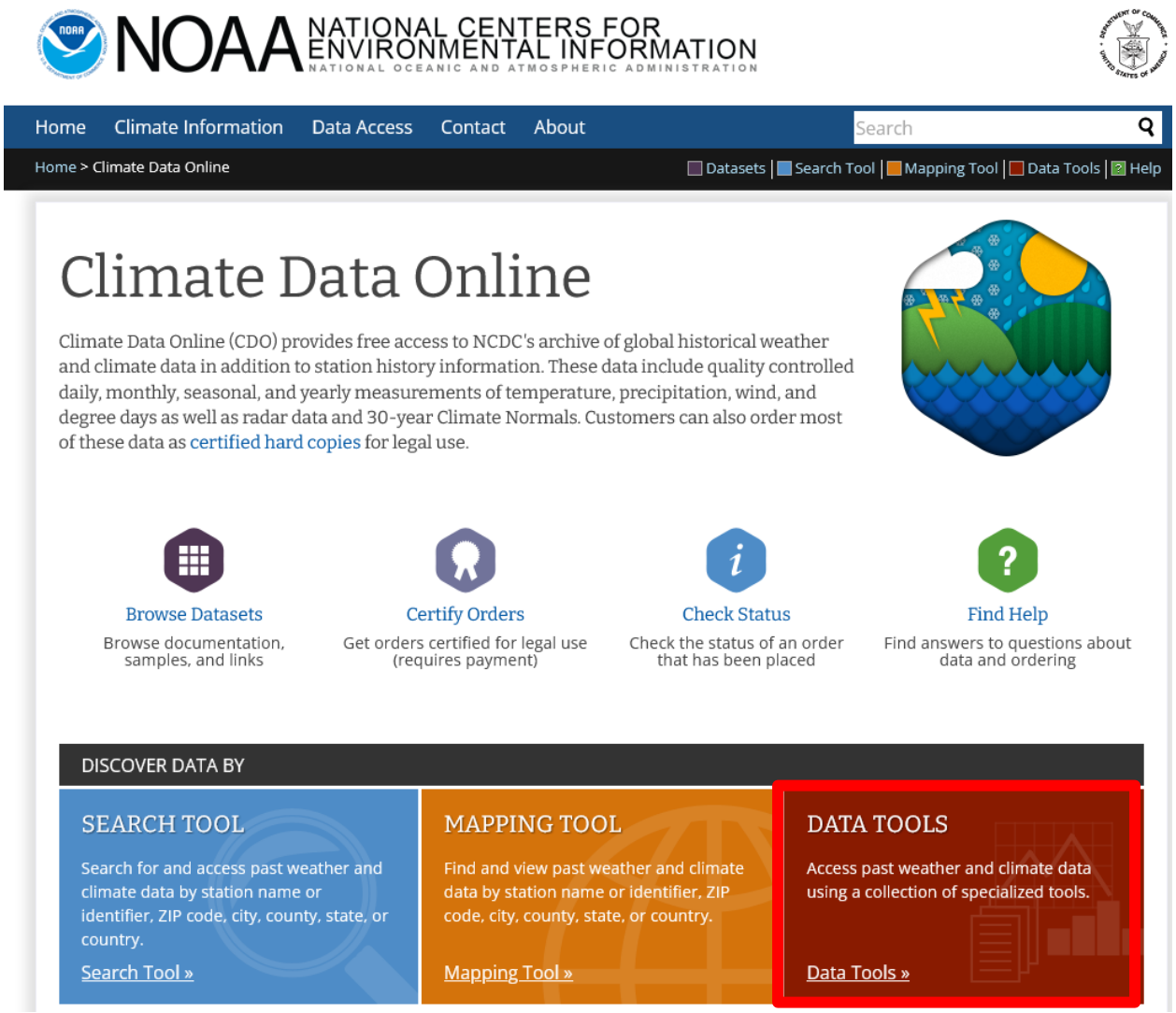
This document demonstrates two methods for acquiring data for a given location and a method of performing the statistical analysis of the data to determine the Extreme Cold Weather Temperature for a given location. These examples are focused on United States and will use data obtained from NOAA's Climate Data Online database and Automated Surface Observing Systems (ASOS). Performance of the statistical analysis with Microsoft Excel is demonstrated as well. The method shown in this document only shows the collection of data and two methods of analyzing this data, both using Microsoft Excel. Note that other data sources may be available for use. Although not addressed here, offshore installations may be able to use National Data Buoy Center (noaa.gov) but data is limited. It is understood that a complete single source data set may not always be available due to a variety of reasons. There may be ways to gather a more complete data set than described below. Document your approach when identifying and addressing suspect data.

Determination of Location's Extreme Cold Weather Temperature

Gathering the Data From NOAA

Navigate to https://www.ncdc.noaa.gov/cdo-web/

1. Select **Data Tools.**



2. Scroll down if necessary and select **Local Climatological Data (LCD).**

Find a Station

Locate weather observing stations using a variety of parameters such as address, ZIP code, date, and data type with filters by observation type

Select a Location

Order data by weather observing stations or by geographic locations using a simplified drill-down interface with data from U.S. and other countries

Search Within a Single Dataset

The following search tools access data from within a specific dataset. Use these tools to view or order data from within each respectiv dataset. Data will be in a more standard format across stations or locations.

Climate Normals

View temperature and precipitation Climate Normals for over 9,800 stations across the United States and a selection of other territories

Daily Weather Records

Access summaries of recent global and U.S. daily weather records with options to view monthly, annual, all-time or selected records

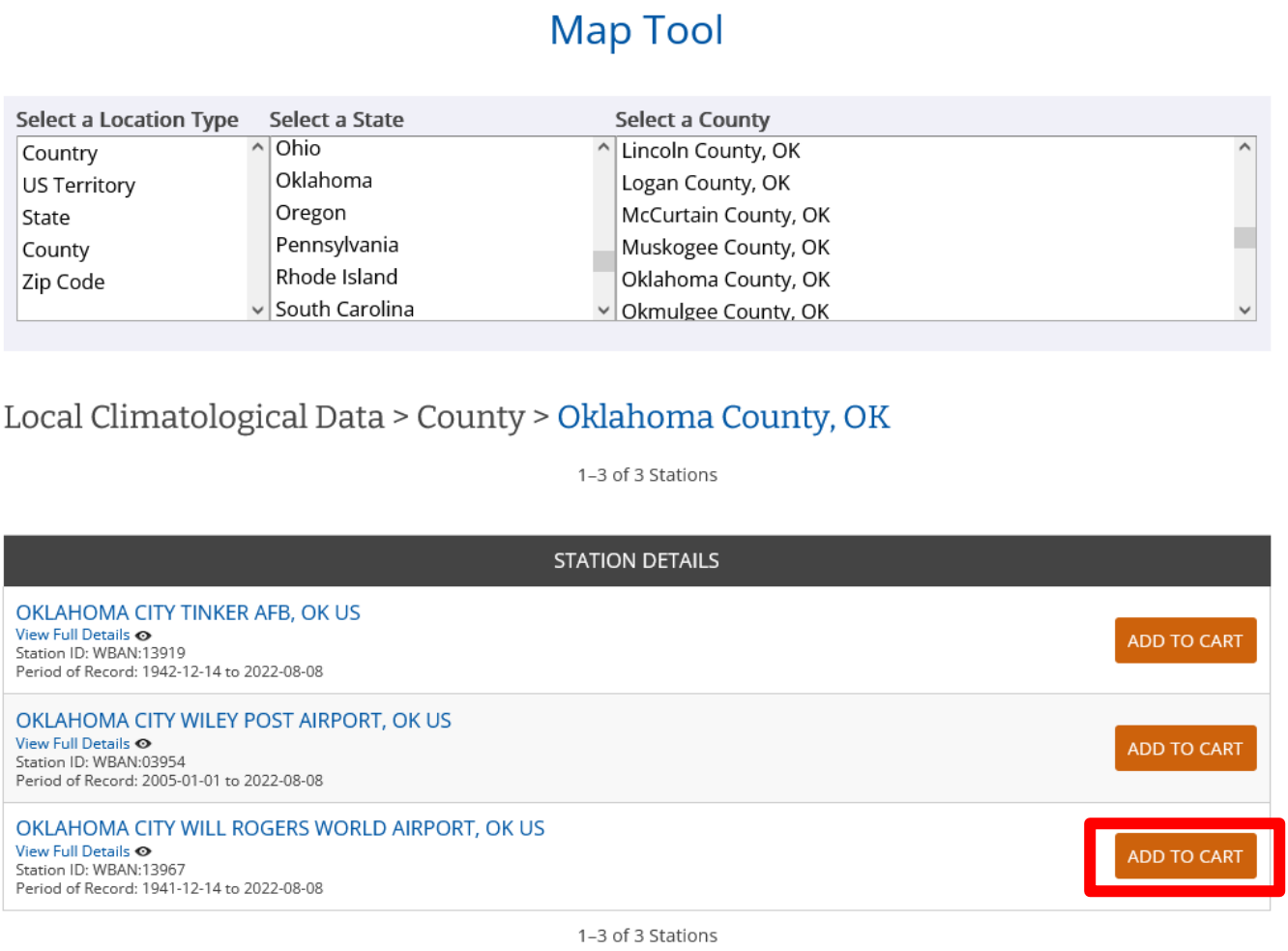
Local Climatological Data (LCD)

View and order hourly, daily, and monthly data from nearly 2400 locations within the U.S., surrounding territories, and other selected areas

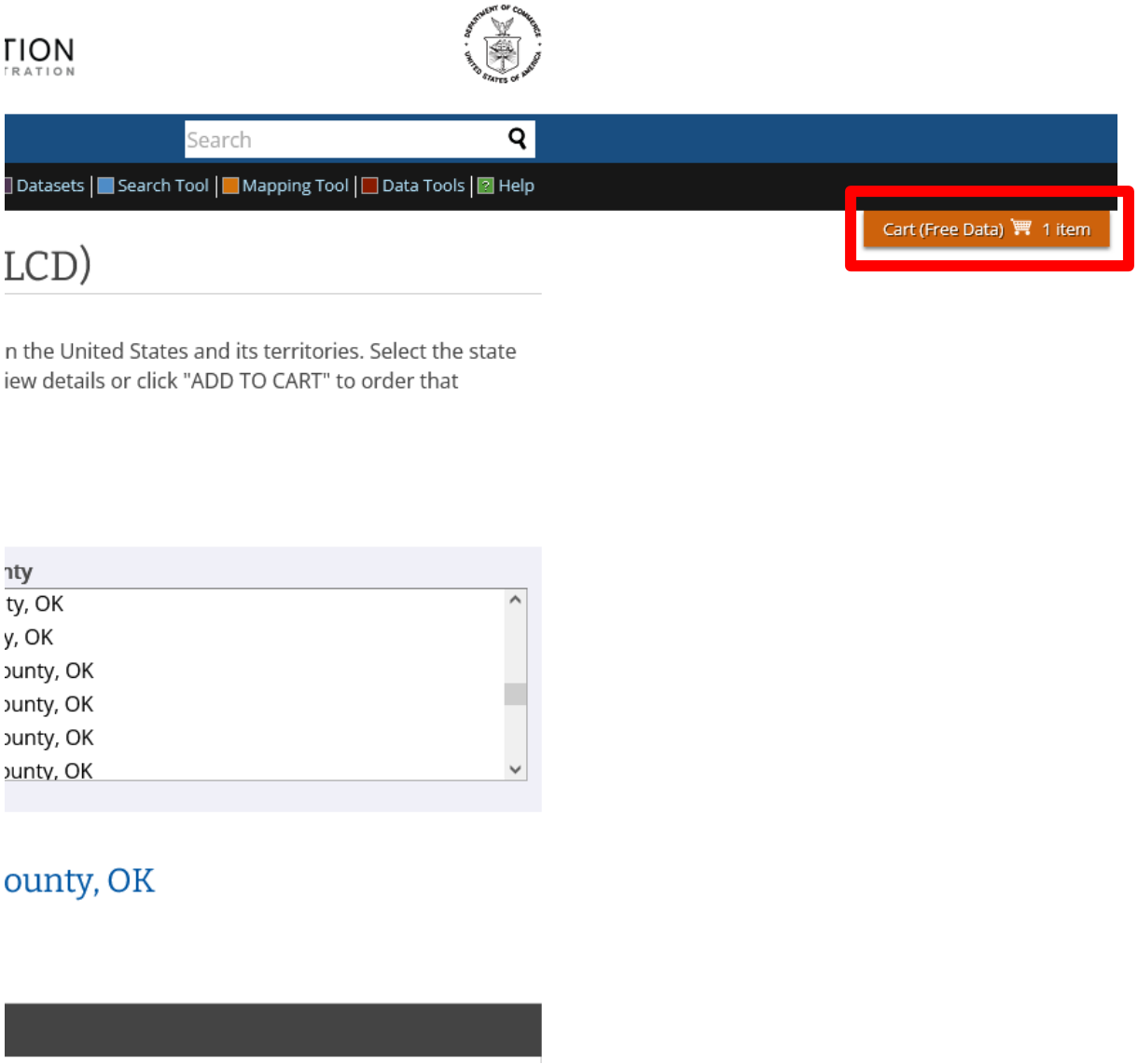
Marine Data

View and order historical marine data which is comprised of ship, buoy, and platform observations from 1662 to present.

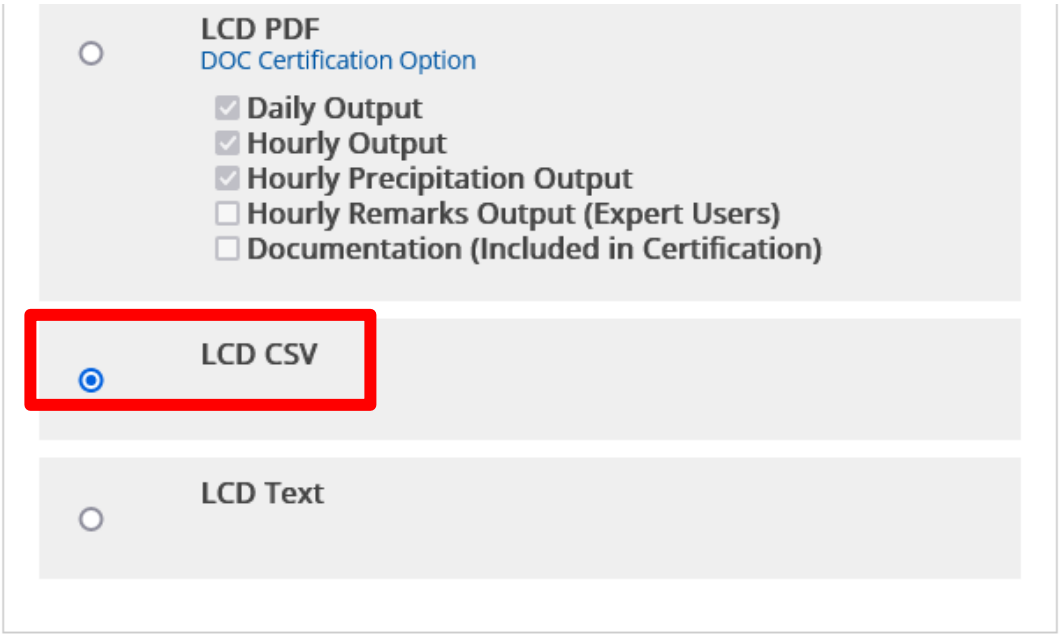
3. Use the selection tool to find a weather station appropriate for your location and click ADD TO CART.

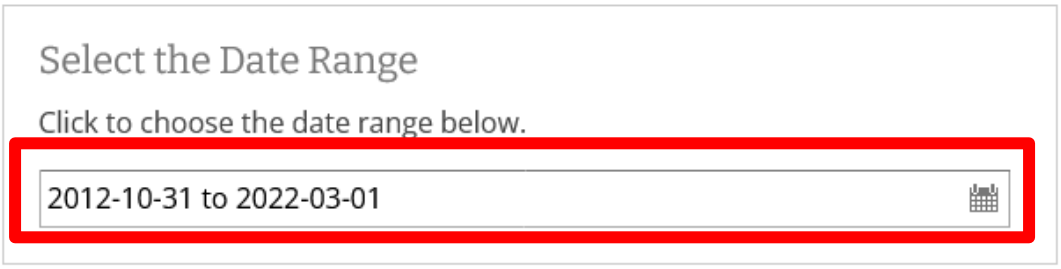


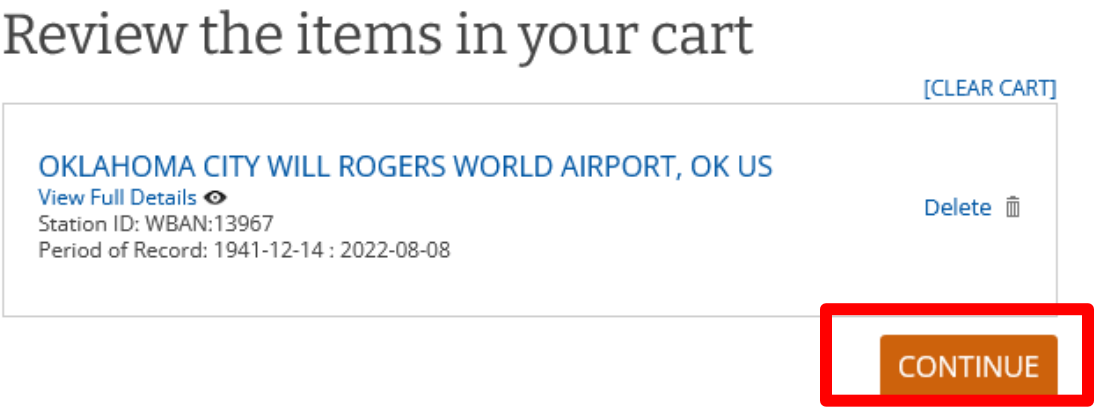
4. Click on the **cart icon** in the upper right-hand portion of the page.



5. Select LCD CSV, your desired date range, and then click continue. (Note: date ranges must be less than 10 years, so this process might have to be repeated several times and multiple files combined into one in order to get all data necessary to perform the analysis to determine the Extreme Cold Weather Temperature)







6. Enter and verify your email address and click **Submit Order.** You will receive an email when your request has been processed and is ready to download.

REQUESTED DATA REVIEW	
Dataset	Local Climatological Data
Order Start Date	2012-10-31 00:00
Order End Date	2022-03-01 23:59
Output Format	LCD CSV
Stations/Locations	OKLAHOMA CITY WILL ROGERS WORLD AIRPORT, OK US (Station ID: WBAN:13967)

Enter email address

Please enter your email address. This is the address to which your data links and information regarding this order will be sent. Please read NOAA's Privacy Policy if you have any concerns.

Email Address

email@address.com

Verify Email Address

email@address.com

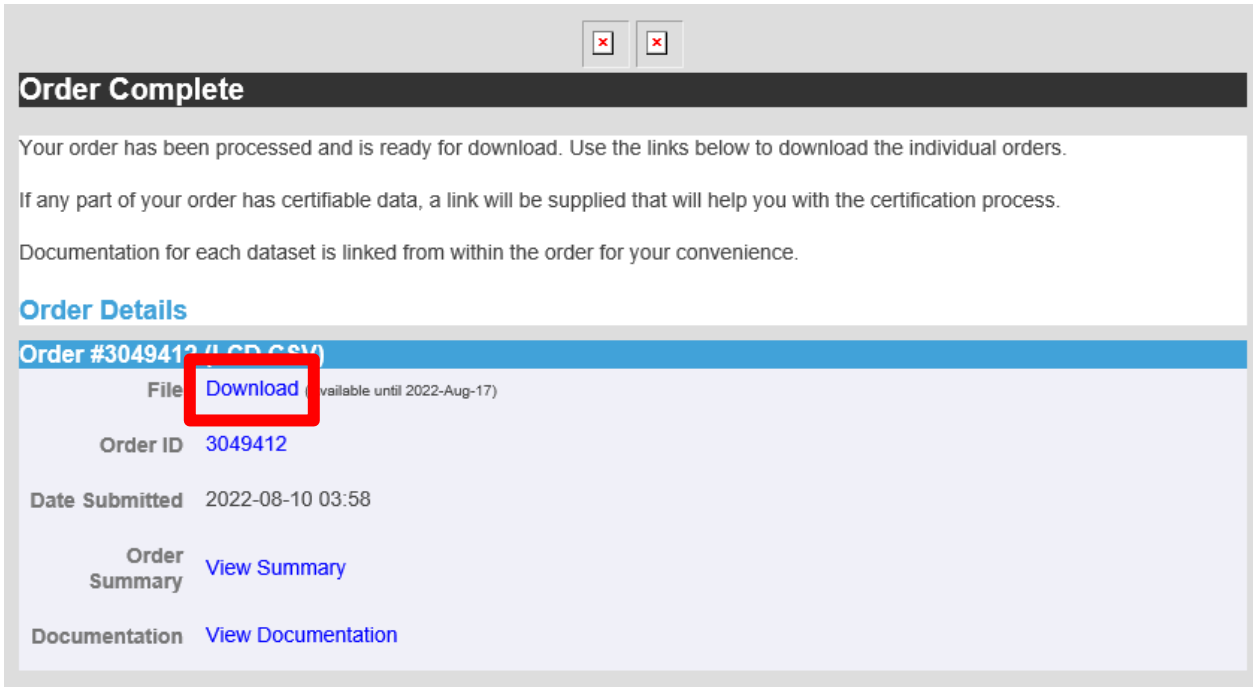
Remember my email address

[Uncheck to forget]

NOAA will not share your email address with anyone. The email address will not be used for any purpose other than communicating the order status.

EDIT ORDER SUBMIT ORDER

7. Click **Download** in the email that you will receive from NOAA to download your dataset.



Analyzing the Data

Option 1

1. Open the .csv file that was downloaded using the previous steps (and combine with other .csv files as necessary to cover the required date range).

2. Add filters to the first row and filter on "Report Type", column C, to only show report type FM-15, this is the standard METAR data.

STATION	DATE	REPOR	SOURC	AWND	Backup	Backup	Backup	Backup	Backup	Backup	Backup	Backup
72353013967	2012-10-31T00:52:00	FM-15	7									
72353013967	2012-10-31T01:52:00	FM-15	7									
72353013967	2012-10-31T02:52:00	FM-15	7									
72353013967	2012-10-31T03:52:00	FM-15	7									
72353013967	2012-10-31T04:52:00	FM-15	7									
72353013967	2012-10-31T05:52:00	FM-15	7									
72353013967	2012-10-31T06:52:00	FM-15	7									
72353013967	2012-10-31T07:52:00	FM-15	7									
72353013967	2012-10-31T08:52:00	FM-15	7									
72353013967	2012-10-31T09:52:00	FM-15	7									
72353013967	2012-10-31T10:52:00	FM-15	7									
72353013967	2012-10-31T11:52:00	FM-15	7									
72353013967	2012-10-31T12:52:00	FM-15	7									
72353013967	2012-10-31T13:52:00	FM-15	7									
72353013967	2012-10-31T14:52:00	FM-15	7									
72353013967	2012-10-31T15:52:00	FM-15	7									
72353013967	2012-10-31T16:52:00	FM-15	7									
72353013967	2012-10-31T17:52:00	FM-15	7									
72353013967	2012-10-31T18:52:00	FM-15	7									
72353013967	2012-10-31T19:52:00	FM-15	7									
72353013967	2012-10-31T20:52:00	FM-15	7									
72353013967	2012-10-31T21:52:00	FM-15	7									
72353013967	2012-10-31T22:52:00	FM-15	7									
72353013967	2012-10-31T23:52:00	FM-15	7									
72353013967	2012-11-01T00:52:00	FM-15	7									
72353013967	2012-11-01T01:52:00	FM-15	7									
72353013967	2012-11-01T02:52:00	FM-15	7									
72353013967	2012-11-01T03:52:00	FM-15	7									
72353013967	2012-11-01T04:52:00	FM-15	7									
72353013967	2012-11-01T05:52:00	FM-15	7									

3. Select the Date column, column B, by clicking on the column, scroll over to the Hourly Dry Bulb Temperature column, column AS, and holding down the CTRL key, select that column. Copy and paste both columns into a new sheet named "Clean and Filter".

DATE	HourlyDryBulbTemperature		
2012-10-31T00:52:00	52		
2012-10-31T01:52:00	51		
2012-10-31T02:52:00	50		
2012-10-31T03:52:00	47		
2012-10-31T04:52:00	46		
2012-10-31T05:52:00	46		
2012-10-31T06:52:00	44		
2012-10-31T07:52:00	48		
2012-10-31T08:52:00	52		
2012-10-31T09:52:00	57		
2012-10-31T10:52:00	61		
2012-10-31T11:52:00	65		
2012-10-31T12:52:00	67		
2012-10-31T13:52:00	68		
2012-10-31T14:52:00	71		
2012-10-31T15:52:00	71		
2012-10-31T16:52:00	70		
2012-10-31T17:52:00	66		
2012-10-31T18:52:00	62		
2012-10-31T19:52:00	59		
2012-10-31T20:52:00	54		
2012-10-31T21:52:00	51		
2012-10-31T22:52:00	52		
2012-10-31T23:52:00	52		
2012-11-01T00:52:00	53		

4. Using the data on the "Clean and Filter" sheet, type **Month** in column C1, type the formula "=mid(A2,6,2)" in cell C2, and copy that formula in column C to the last row of the data set. Then Filter month to only show months 1, 2, 12 (January, February, and December).

5. You can then filter by Hourly Dry Bulb Temperature (Column B) to find and address bad data as appropriate. Bad data may consist of corrupt or missing values. It is beneficial to document information about the bad data to support the calculation of ECWT. If there are other sources that are similar to the source selected that has more complete data or the data can be used, consider that option and document accordingly. It is understood that complete single source data sets may not be the norm due to a variety of reasons- technology, maintenance on monitoring devices, failure to record, instrument failure, instrument testing, etc. You may not have the reason for the corrupt or missing data and documenting the raw data and its source is recommended. Now Select, Copy, and Paste the remaining data to a new sheet named ECWT

	A	B	C	D
1	DATE	HourlyDryBulbTemperatur	Month	
747	2012-12-01T00:52:00	58	12	
748	2012-12-01T01:52:00	58	12	
749	2012-12-01T02:52:00	59	12	
750	2012-12-01T03:52:00	59	12	
751	2012-12-01T04:52:00	58	12	
752	2012-12-01T05:52:00	59	12	
753	2012-12-01T06:52:00	58	12	
754	2012-12-01T07:52:00	60	12	
755	2012-12-01T08:52:00	61	12	
756	2012-12-01T09:52:00	63	12	
757	2012-12-01T10:52:00	66	12	
758	2012-12-01T11:52:00	71	12	
759	2012-12-01T12:52:00	74	12	
760	2012-12-01T13:52:00	75	12	
761	2012-12-01T14:52:00	77	12	
762	2012-12-01T15:52:00	76	12	
763	2012-12-01T16:52:00	73	12	
764	2012-12-01T17:52:00	67	12	
765	2012-12-01T18:52:00	64	12	
766	2012-12-01T19:52:00	63	12	
767	2012-12-01T20:52:00	58	12	
768	2012-12-01T21:52:00	61	12	
769	2012-12-01T22:52:00	52	12	
770	2012-12-01T23:52:00	50	12	
771	2012-12-02T00:52:00	48	12	
772	2012-12-02T01:52:00	46	12	
773	2012-12-02T02:52:00	45	12	
774	2012-12-02T03:52:00	43	12	
775	2012-12-02T04:52:00	44	12	
776	2012-12-02T05:52:00	43	12	

6. Using Excel's built in Percentile function, the Extreme Cold Weather Temperature (ECWT) can now be determined. While on the ECWT sheet, in a blank cell use the function "=PERCENTILE.INC()" and select all temperature data in Column B (Hourly Dry Bulb Temperature) on the "ECWT" sheet and use 0.002 for the percentile value. The formula will look similar to this, "=PERCENTILE.INC(B:B,0.002)" (using 0.002 for the second argument in this function returns the two-tenths percentile temperature of the hourly temperatures measured in the dataset used).

   <u>This value should be representative of the Extreme Cold Weather Temperature based on the given dataset.</u>

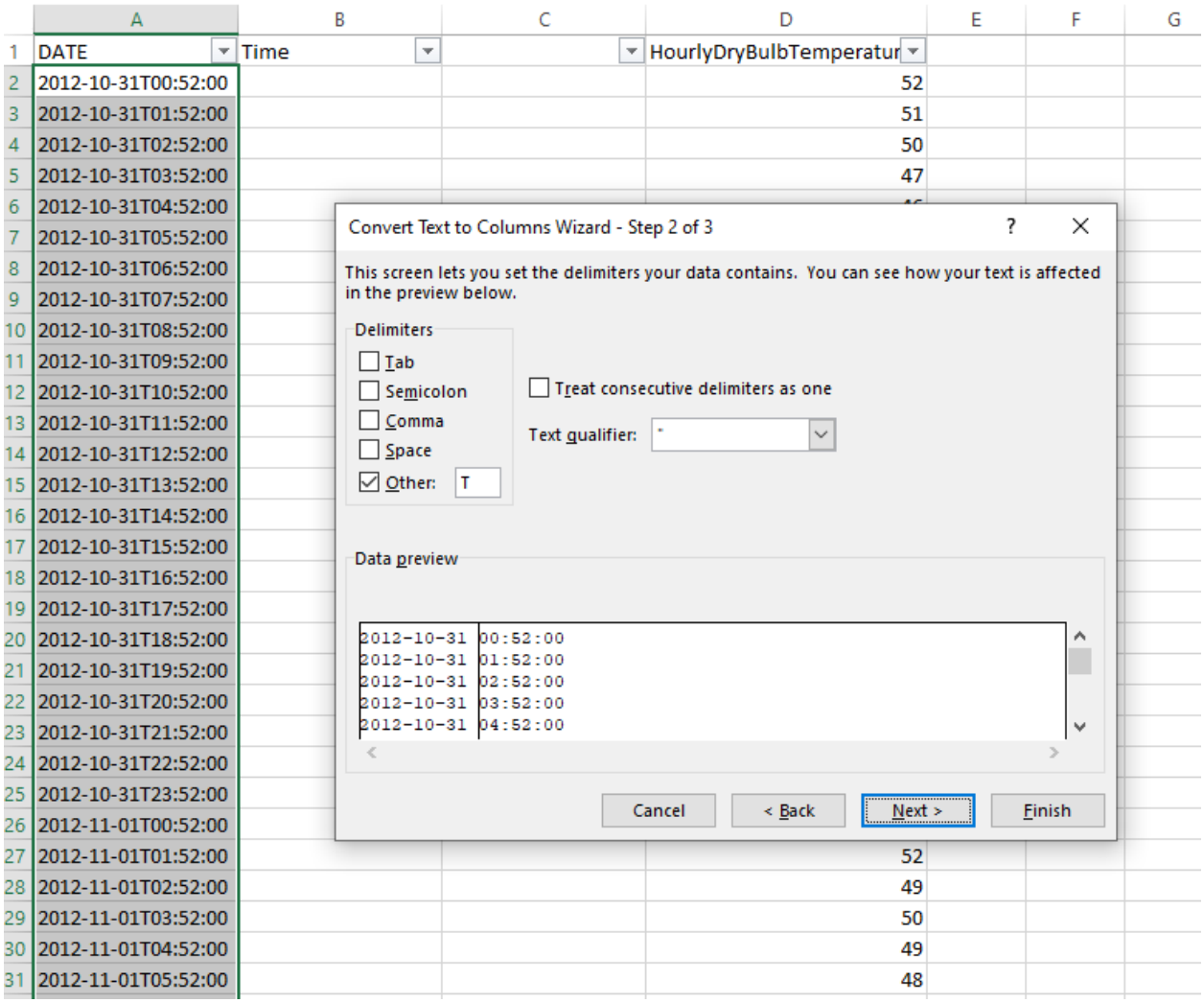
E5 =PERCENTILE.INC(B:B,0.002)

	A	B	C	D	E	F	G
1	DATE	HourlyDryBulbTemperature	Month				
2	2012-12-01T00:52:00	58	12				
3	2012-12-01T01:52:00	58	12				
4	2012-12-01T02:52:00	59	12		ECWT		
5	2012-12-01T03:52:00	59	12		2		
6	2012-12-01T04:52:00	58	12				
7	2012-12-01T05:52:00	59	12				
8	2012-12-01T06:52:00	58	12				
9	2012-12-01T07:52:00	60	12				
10	2012-12-01T08:52:00	61	12				
11	2012-12-01T09:52:00	63	12				
12	2012-12-01T10:52:00	66	12				
13	2012-12-01T11:52:00	71	12				
14	2012-12-01T12:52:00	74	12				
15	2012-12-01T13:52:00	75	12				
16	2012-12-01T14:52:00	77	12				
17	2012-12-01T15:52:00	76	12				
18	2012-12-01T16:52:00	73	12				
19	2012-12-01T17:52:00	67	12				

Option 2

These next few steps demonstrate how to view the distribution of temperatures from the data set and obtain the Extreme Cold Weather Temperature by a slightly different method.

1. On the "Clean and Filter" sheet, insert two new columns between column A and column B. Select column A and use Excel's *Text to Columns* feature and selected the delimited option and use the letter "T" to split the date data into a date component and a time component by hitting "Next" and "Finish". (Note: You can also do a "Find and Replace, finding the letter T and replacing it with a space to change the information in the Date column to a numerical value that can then be used for calculations.)

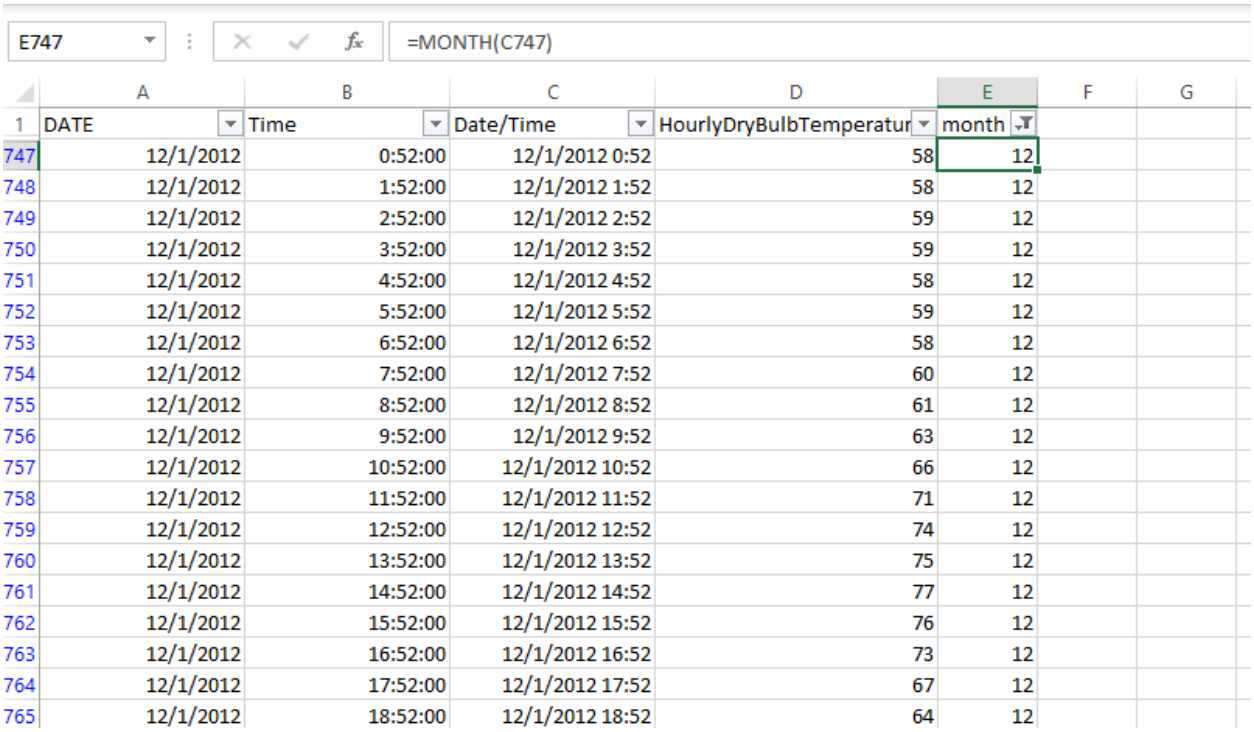


2. Add in column C, add the date in column A to time in column B, and copy this formula for all rows of the data set.

C2 =A2+B2

	A	B	C	D
1	DATE	Time	Date/Time	HourlyDryBulbTemperatur
2	10/31/2012	0:52:00	10/31/2012 0:52	52
3	10/31/2012	1:52:00	10/31/2012 1:52	51
4	10/31/2012	2:52:00	10/31/2012 2:52	50
5	10/31/2012	3:52:00	10/31/2012 3:52	47
6	10/31/2012	4:52:00	10/31/2012 4:52	46
7	10/31/2012	5:52:00	10/31/2012 5:52	46
8	10/31/2012	6:52:00	10/31/2012 6:52	44
9	10/31/2012	7:52:00	10/31/2012 7:52	48
10	10/31/2012	8:52:00	10/31/2012 8:52	52
11	10/31/2012	9:52:00	10/31/2012 9:52	57
12	10/31/2012	10:52:00	10/31/2012 10:52	61
13	10/31/2012	11:52:00	10/31/2012 11:52	65
14	10/31/2012	12:52:00	10/31/2012 12:52	67
15	10/31/2012	13:52:00	10/31/2012 13:52	68
16	10/31/2012	14:52:00	10/31/2012 14:52	71
17	10/31/2012	15:52:00	10/31/2012 15:52	71
18	10/31/2012	16:52:00	10/31/2012 16:52	70
19	10/31/2012	17:52:00	10/31/2012 17:52	66
20	10/31/2012	18:52:00	10/31/2012 18:52	62
21	10/31/2012	19:52:00	10/31/2012 19:52	59
22	10/31/2012	20:52:00	10/31/2012 20:52	54
23	10/31/2012	21:52:00	10/31/2012 21:52	51

3. Type Month in cell E1, and in cell E2 use the formula "=month(C2)". Copy the formula for all rows of the data set, then filter based on month, only selecting 1,2,12 for the desired months. Then copy remaining data from column C and column D to a sheet named Histogram.



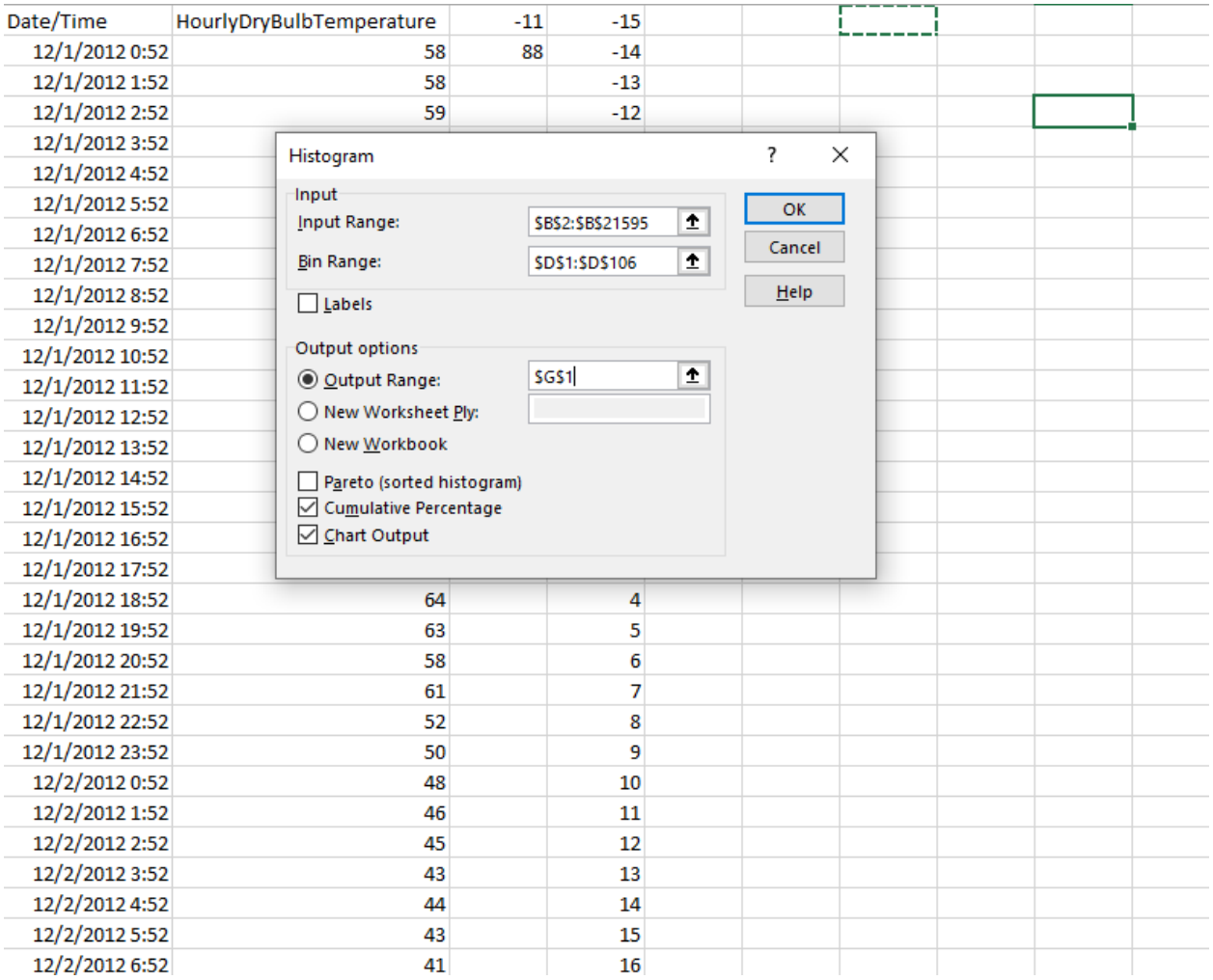
E747 =MONTH(C747)

	A	B	C	D	E	F	G
1	DATE	Time	Date/Time	HourlyDryBulbTemperatur	month		
747	12/1/2012	0:52:00	12/1/2012 0:52	58	12		
748	12/1/2012	1:52:00	12/1/2012 1:52	58	12		
749	12/1/2012	2:52:00	12/1/2012 2:52	59	12		
750	12/1/2012	3:52:00	12/1/2012 3:52	59	12		
751	12/1/2012	4:52:00	12/1/2012 4:52	58	12		
752	12/1/2012	5:52:00	12/1/2012 5:52	59	12		
753	12/1/2012	6:52:00	12/1/2012 6:52	58	12		
754	12/1/2012	7:52:00	12/1/2012 7:52	60	12		
755	12/1/2012	8:52:00	12/1/2012 8:52	61	12		
756	12/1/2012	9:52:00	12/1/2012 9:52	63	12		
757	12/1/2012	10:52:00	12/1/2012 10:52	66	12		
758	12/1/2012	11:52:00	12/1/2012 11:52	71	12		
759	12/1/2012	12:52:00	12/1/2012 12:52	74	12		
760	12/1/2012	13:52:00	12/1/2012 13:52	75	12		
761	12/1/2012	14:52:00	12/1/2012 14:52	77	12		
762	12/1/2012	15:52:00	12/1/2012 15:52	76	12		
763	12/1/2012	16:52:00	12/1/2012 16:52	73	12		
764	12/1/2012	17:52:00	12/1/2012 17:52	67	12		
765	12/1/2012	18:52:00	12/1/2012 18:52	64	12		

4. On the Histogram sheet, enter "=min(B:B)" in cell C1, and "=max(B:B)" in cell C2. This will give you the minimum and maximum temperatures in the dataset. We will use the temperatures to set range for this histogram. In Column D start with a value, a few degrees below the min, then list every degree to a few degrees above the max.

Date/Time	HourlyDryBulbTemperature	-11	-15	
12/1/2012 0:52	58	88	-14	
12/1/2012 1:52	58		-13	
12/1/2012 2:52	59		-12	
12/1/2012 3:52	59		-11	
12/1/2012 4:52	58		-10	
12/1/2012 5:52	59		-9	
12/1/2012 6:52	58		-8	
12/1/2012 7:52	60		-7	
12/1/2012 8:52	61		-6	
12/1/2012 9:52	63		-5	
12/1/2012 10:52	66		-4	
12/1/2012 11:52	71		-3	
12/1/2012 12:52	74		-2	
12/1/2012 13:52	75		-1	
12/1/2012 14:52	77		0	
12/1/2012 15:52	76		1	
12/1/2012 16:52	73		2	
12/1/2012 17:52	67		3	
12/1/2012 18:52	64		4	
12/1/2012 19:52	63		5	
12/1/2012 20:52	58		6	
12/1/2012 21:52	61		7	
12/1/2012 22:52	52		8	
12/1/2012 23:52	50		9	
12/2/2012 0:52	48		10	
12/2/2012 1:52	46		11	
12/2/2012 2:52	45		12	
12/2/2012 3:52	43		13	
12/2/2012 4:52	44		14	
12/2/2012 5:52	43		15	
12/2/2012 6:52	41		16	
12/2/2012 7:52	38		17	
12/2/2012 8:52	44		18	

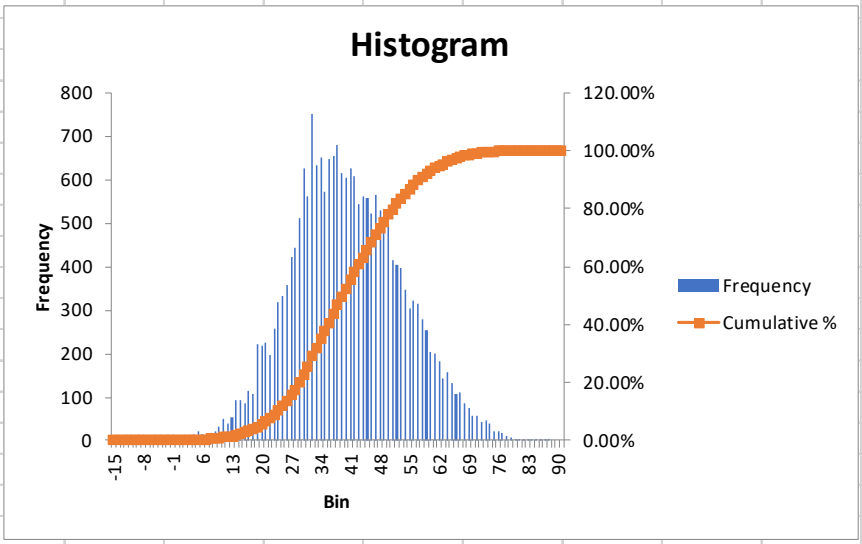
5. In the Data Analysis ToolPak in excel, select histogram. Select all dry bulb temperatures for your Input Range. Select all the Temperatures in column D for our Bin Range. Select an empty cell for your Output Range. Check the Cumulative Percentage and Chart Output boxes.



Date/Time	HourlyDryBulbTemperature	-11	-15
12/1/2012 0:52	58	88	-14
12/1/2012 1:52	58		-13
12/1/2012 2:52	59		-12
12/1/2012 3:52			
12/1/2012 4:52			
12/1/2012 5:52			
12/1/2012 6:52			
12/1/2012 7:52			
12/1/2012 8:52			
12/1/2012 9:52			
12/1/2012 10:52			
12/1/2012 11:52			
12/1/2012 12:52			
12/1/2012 13:52			
12/1/2012 14:52			
12/1/2012 15:52			
12/1/2012 16:52			
12/1/2012 17:52			
12/1/2012 18:52	64		4
12/1/2012 19:52	63		5
12/1/2012 20:52	58		6
12/1/2012 21:52	61		7
12/1/2012 22:52	52		8
12/1/2012 23:52	50		9
12/2/2012 0:52	48		10
12/2/2012 1:52	46		11
12/2/2012 2:52	45		12
12/2/2012 3:52	43		13
12/2/2012 4:52	44		14
12/2/2012 5:52	43		15
12/2/2012 6:52	41		16

6. The output from this will provide a listing of percentile rankings for the listed temperatures, as well as a graph output of the distribution of temperatures contained in this dataset. The "Bin" column shows the temperature, "Frequency" shows how many times that temperature occurred within the dataset, and "Cumulative %" shows the percentile ranking for each temperature. Choose the temperature at or closest to the 0.2 percentile level.

Bin	*Frequency*	*umulative %*
-15	0	0.00%
-14	0	0.00%
-13	0	0.00%
-12	0	0.00%
-11	1	0.00%
-10	0	0.00%
-9	2	0.01%
-8	0	0.01%
-7	1	0.02%
-6	4	0.04%
-5	4	0.06%
-4	4	0.07%
-3	1	0.08%
-2	4	0.10%
-1	6	0.13%
0	5	0.15%
1	3	0.16%
2	**11**	**0.21%**
3	5	0.24%
4	13	0.30%
5	22	0.40%
6	14	0.46%
7	12	0.52%
8	17	0.60%
9	23	0.70%
10	32	0.85%
11	50	1.08%
12	39	1.26%
13	53	1.51%
14	93	1.94%
15	92	2.37%
16	86	2.76%

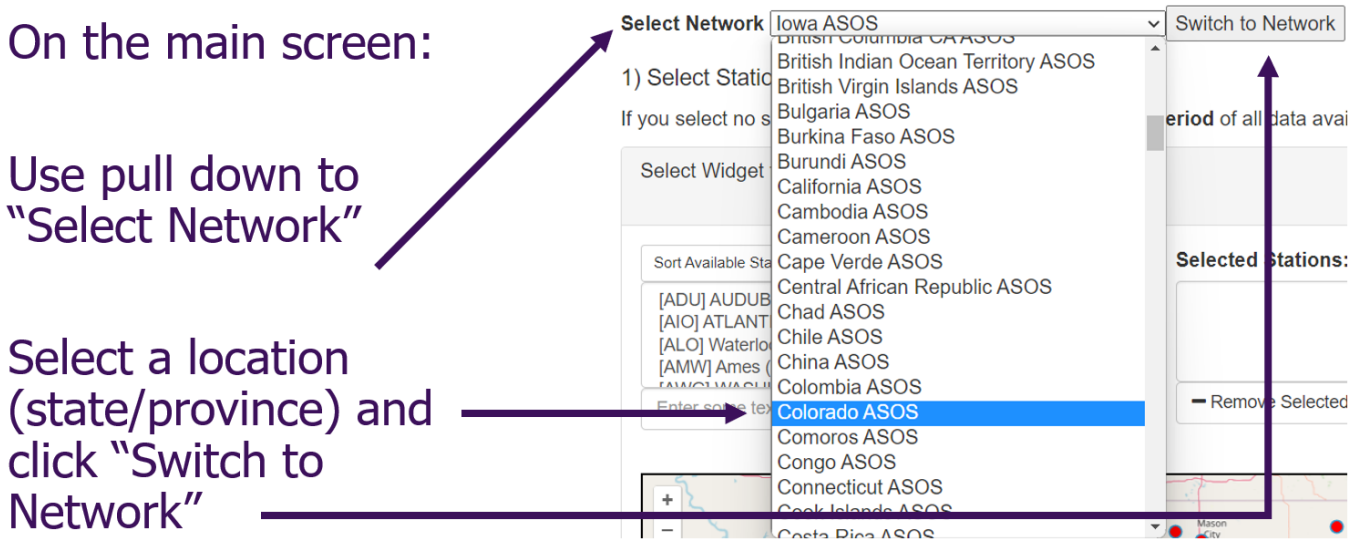


Gathering Data From ASOS

The Automated Surface Observing System (ASOS) program is a joint effort between the National Weather Service (NWS), the Federal Aviation Administration (FAA), and the Department of Defense (DOD). The primary function of ASOS stations is to take minute-by-minute observations and generate weather reports for use. The National Center for Environmental Information (NCEI) provides an archive of one-minute internal observations for many US ASOS sites back to the year 2000. Data is not available for all sites back to the year 2000.

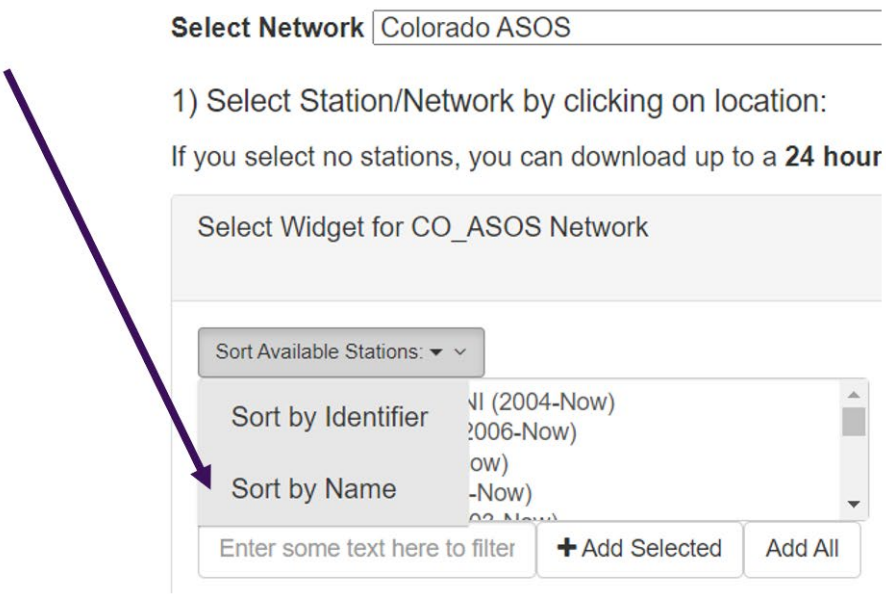
Each ASOS station is designed to provide observations every minute of every hour of every day. In general, ASOS stations are located at airports so may limit some use for ECWT calculations depending upon the Generator Owner selection process. Sensors measure wind speed and direction, dew point, air temperature, and station pressure. The vast majority also measure precipitation type and amount, visibility, and cloud height and thickness. Data is available for Canadian airports. More information is available at IEM :: ASOS/AWOS Network (iastate.edu) and https://mesonet.agron.iastate.edu/request/download.phtml where the example graphics were gathered. Additional information is available at ASOS (weather.gov).

1. Selecting Data
   ASOS uses "Network" to describe particular locations. From the main screen you would use the pulldown for "Select Network" and then select a particular location.



Sorting the data is available by an "identifier" (the airport code) or "name" (city or airport name normally) with "name" probably providing the easier way to identify the location needed to facilitate ECWT calculation efforts. This is needed to support the weather station selection. When downloading the information, the "identifier" will be included in the data set, so it is recommended that you ensure you are getting the correct location by both name and identifier.

Select "Sort by Identifier" or "Sort by Name" on the "Sort Available Stations" drop down.



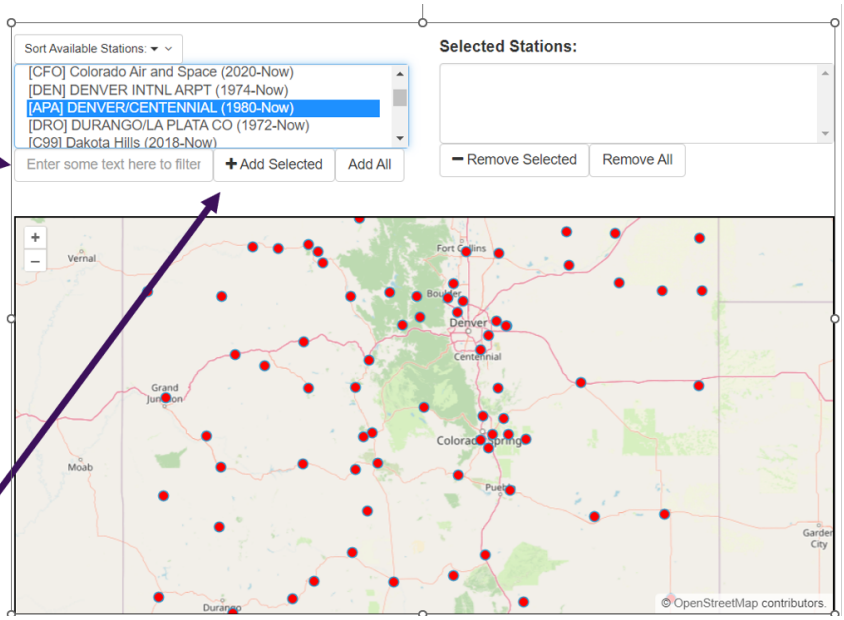
A map of available weather stations is provided along with options to select a particular weather station. Make sure you select "+ADD Selected" toggle button to capture the weather station.

Text search

Or can use the map to find a station name/ID

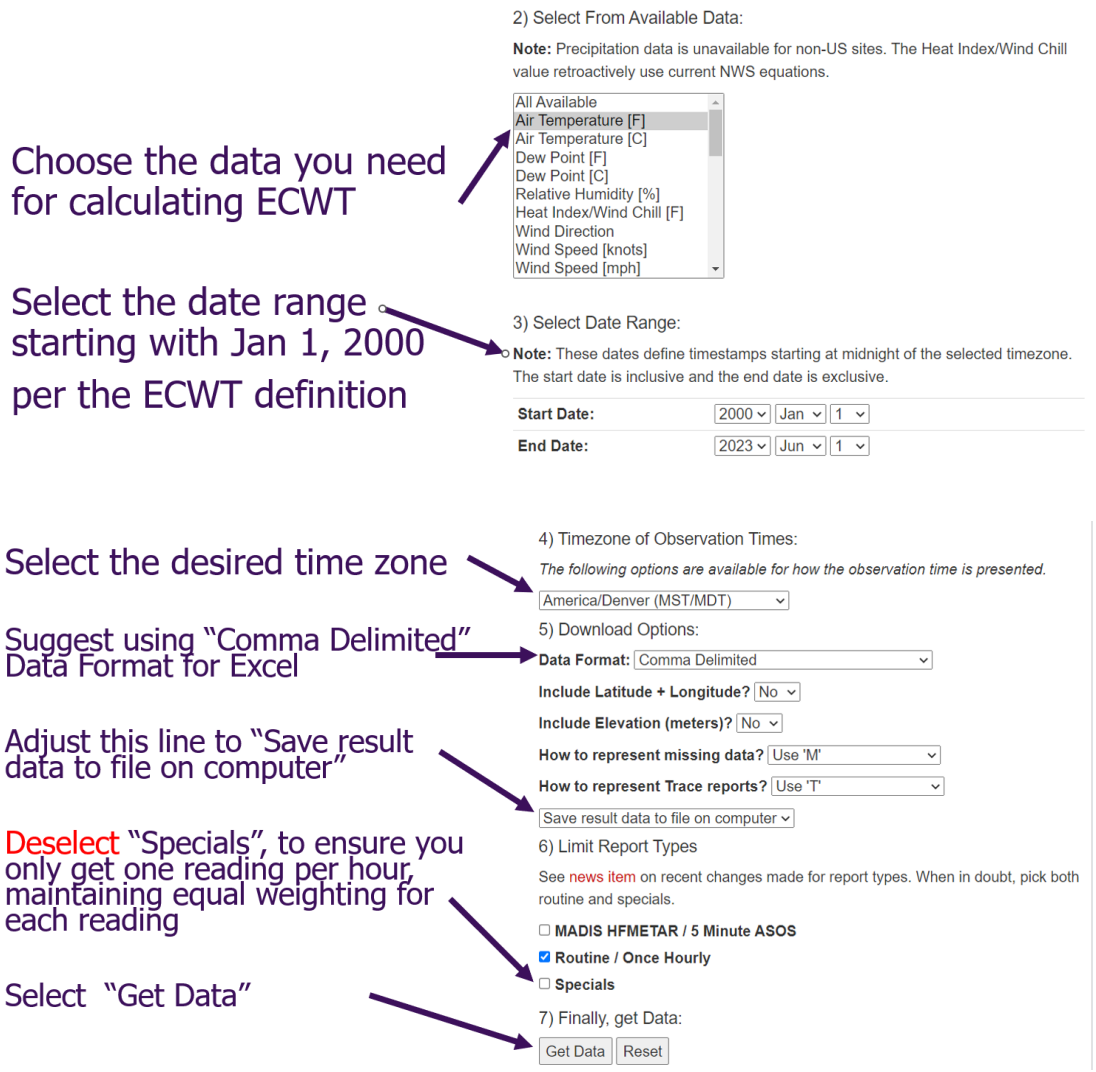
Or can just scroll and choose the station desired.

Select "+Add Selected"



At this point you can select data types, date ranges, time zones, data formats, download options, and report types. Note that some data types may not be available for the location. As discussed with the NOAA example, if hourly values for temperature are not available, document in your methodology or support documents how that is managed. It is important to note what may be missing/corrupt and how you approach that condition. As of yet, no criteria has been set to indicate how much can be missing (or present) to be considered an appropriate calculation of ECWT. Use professional judgement and present it in the best way possible if asked.

Make sure you understand the "Notes" ASOS provides when selecting data.

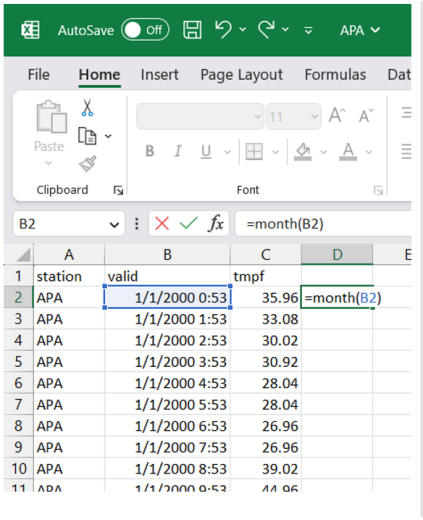


Note the "Deselection" verbiage as this could lead to possible erroneous ECWT calculations if left selected. By removing the Specials, the data set will have fewer duplicate readings in the data set.

After selecting "Get Data" you should receive a download with the filtered data. It is important to retain this raw file. The file should conatin every hour for every month for the Date Range selected. This helps preserve the documentation to demonstrate the means by which you arrived at the ECWT you determine.
The ECWT definition only requires the months of December, January, and February to be selected. Once you have the comma delimited file, save it as an Excel worksheet. Then use the "MONTH" function to provie a simple numeric value (e.g., January = 1, February = 2, etc) and then filter on 1, 2, and 12 to get the three months required by the ECWT definition.

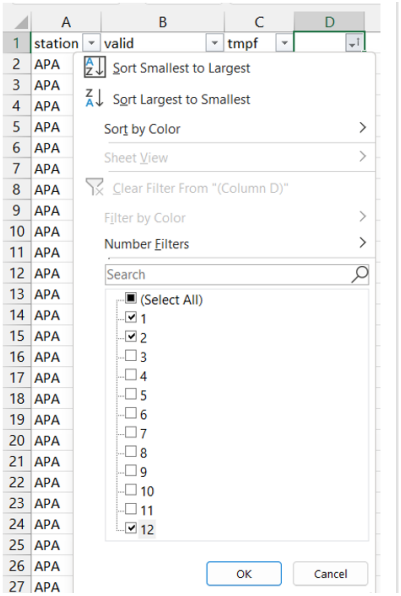
ECWT only uses the months of January, February and December.

Use the MONTH function to get a numeric value in an empty column and then copy that formula down through the end of the data set. Other filtering options can be used.



	A	B	C	D
1	station	valid	tmpf	
2	APA	1/1/2000 0:53	35.96	=month(B2)
3	APA	1/1/2000 1:53	33.08	
4	APA	1/1/2000 2:53	30.02	
5	APA	1/1/2000 3:53	30.92	
6	APA	1/1/2000 4:53	28.04	
7	APA	1/1/2000 5:53	28.04	
8	APA	1/1/2000 6:53	26.96	
9	APA	1/1/2000 7:53	26.96	
10	APA	1/1/2000 8:53	39.02	

Once a numeric value is produced you can simply use excel filters.



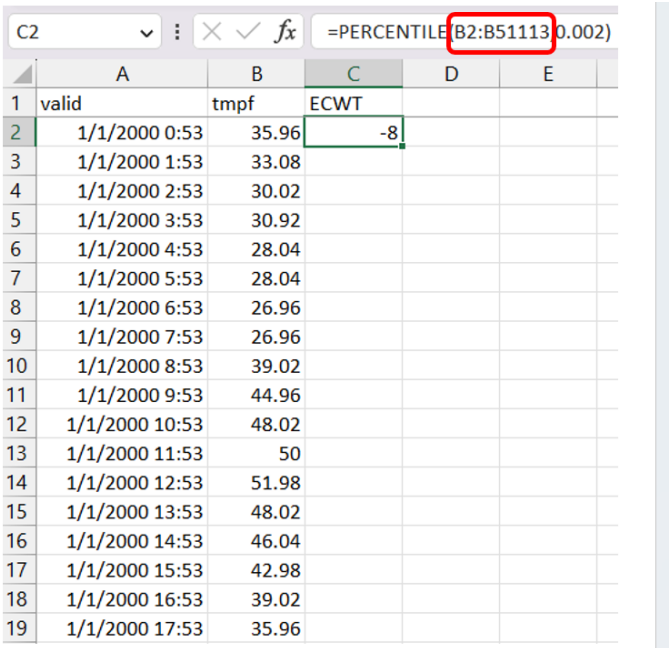
It is suggested that you highlight and copy the filtered data to another worksheet or file. Again, if moving the data to a separate spreadsheet be sure to maintain this original file for documentation.

When you paste the data into the new worksheet, you will have the the data from December, Janauary and February from all years needed to caculate ECWT. Add the Microsoft Excel function "PERCENTILE" to a new cell with the proper percentile value from the ECWT definition (i.e. "0.2 percentile" which for Excel is .002)). Make sure you capture your complete data set. (Example: =PERCENTILE(B:B,.002))

Compute the ECWT using the PERCENTILE function in Excel:

=PERCENTILE(range,0.002)

Ensure your range includes all the data points (e.g., B2:B51113 in the example)



	A	B	C	D	E
1	valid	tmpf	ECWT		
2	1/1/2000 0:53	35.96	-8		
3	1/1/2000 1:53	33.08			
4	1/1/2000 2:53	30.02			
5	1/1/2000 3:53	30.92			
6	1/1/2000 4:53	28.04			
7	1/1/2000 5:53	28.04			
8	1/1/2000 6:53	26.96			
9	1/1/2000 7:53	26.96			
10	1/1/2000 8:53	39.02			
11	1/1/2000 9:53	44.96			
12	1/1/2000 10:53	48.02			
13	1/1/2000 11:53	50			
14	1/1/2000 12:53	51.98			
15	1/1/2000 13:53	48.02			
16	1/1/2000 14:53	46.04			
17	1/1/2000 15:53	42.98			
18	1/1/2000 16:53	39.02			
19	1/1/2000 17:53	35.96			

In the above example, the ECWT is -8 (cell C1) based on the data in column B. Essentially you have completed your ECWT at this point, but it is important to do a quality check or other validation effort. You want to make sure you have the most complete set of data that is as free of errors as possible to determine the ECWT.

To help ensure data quality assurance you should evaluate how many hours of data you might expect for the given year an ECWT is being calculated. Using the "COUNTA" Excel function and the data range will provide a value but a check on that value is encouraged. The basic premise is to calculate the number of "full" years by 90 (the number of days i.e., January and December have 31 and February has 28) by 24 (number of hours in a day) plus the number of past leap years (years with 29 days in February) by 24 (number of hours in a day) plus the number of days in January and February for the current year by 24 (number of hours in a day). Note: "Full" years is inclusive of 2000. It is not stated in the Standard but when recalculating the ECWT, you are encouraged to recalculate ***after*** February has passed and before December of the year in which you are recalculating to provide the most up to date information.

Effectively, if this example is used, the calculation for March 2024 would look like:

(24X90X24) + (6X24) + (60X24) = 53424 data points where "full" years is 24 for 2000-2023, leap years included in the calculation is 7 (2000, 20004, 2008, 2012, 2016, 2020 and 2024), and days in the current year is 59 (January is 31 and February is 28 with February 29 accounted for in the leap years). Other methods can be used of course but make sure you retain how you came up with the value.

If you noticed ASOS provides filters for missing data but may not capture missing hours. You can use Excel in a variety of ways to verify if the number of hours accounted for in the data range selected. To the point made earlier, all hours may not be available for an ECWT calculation due to a variety of issues. If a large number of hours are missing, consider using other weather stations within close proximity or the combination of NWS/NOAA and ASOS data (regardless of what your primary data source is) in an attempt to capture a fuller data set. The key is

documenting what is missing and what you did with your approach. To date there has not been an approach to determine the statistical significance "margin" for ECWT.

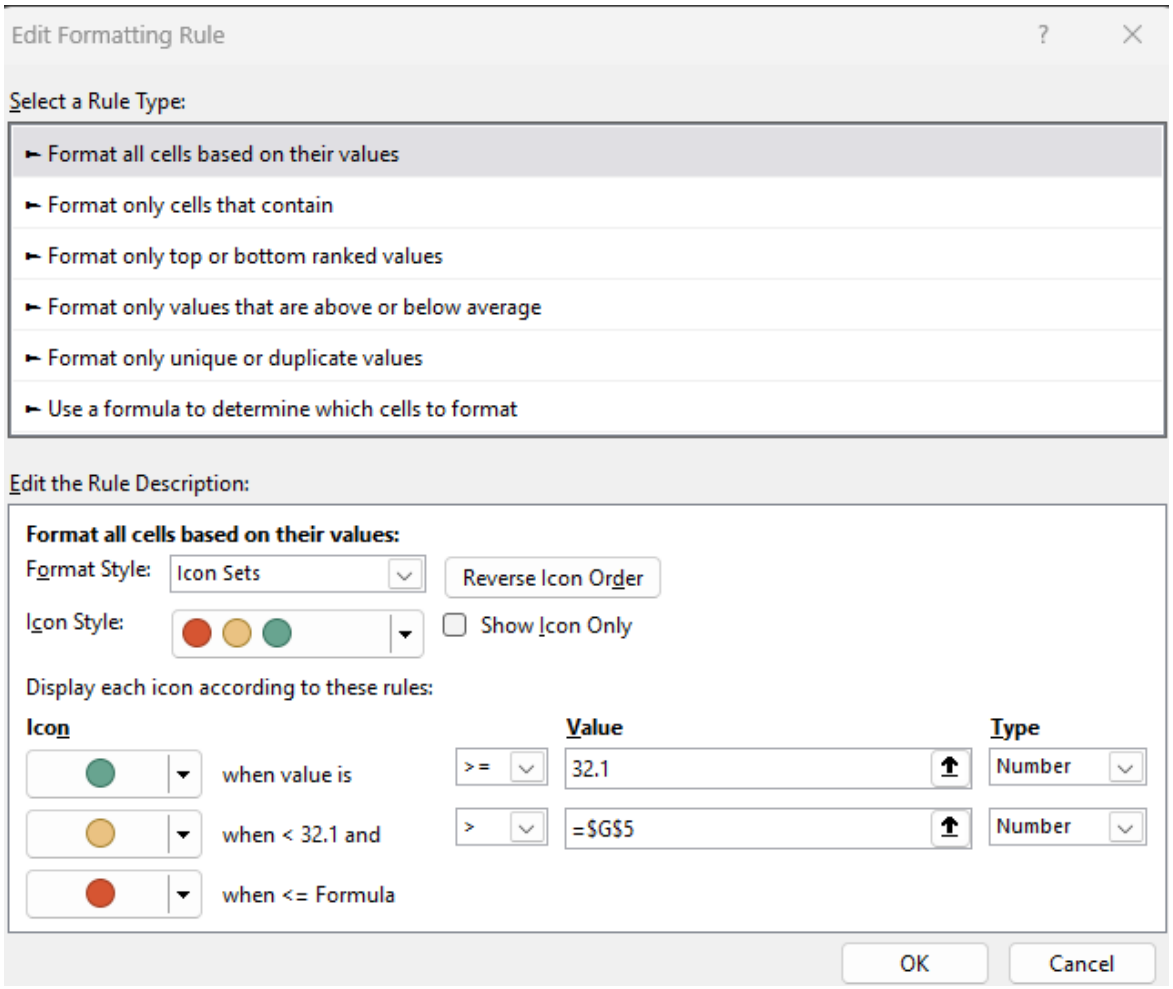
Excel also provides the ability to visualize when temperatures drop below ECWT, hover around ECWT, or exceed ECWT if more analysis is needed. This visualization, in conjunction with your efforts to find missing hours may provide insight for your approach to missing data. In any case, document what you have done.

valid	Month	tmpf	Time Check	ECWT	Data Points	Missing Data Points
1/1/2000 8:56	1	42.8		**6.000**	53247	177
1/1/2000 9:56	1	46	1.00			
1/1/2000 10:56	1	57	1.00	Reord low temp		-17
1/1/2000 11:56	1	68	1.00	Maximum		
1/1/2000 12:56	1	72	1.00	6,603.00		
1/1/2000 13:56	1	72	1.00	Minimum		
1/1/2000 14:56	1	72	1.00	0.05		
1/1/2000 15:56	1	71	1.00			
1/1/2000 16:56	1	69	1.00			
1/1/2000 17:56	1	65	1.00			

This picture shows one way that can be used to verify the data is reasonably complete. The Data Points of 53,247 is compared to the total number of hours that are included from January 1, 2000 through February 29, 2024 of 53, 424. The Data Points number is found by using the =COUNT function and highlighting the data in the "tmpf" column.

To evaluate the missing data points, the Time Check column compares the time shown on the row above with the time on that row. The formula for this is =(B6-B5)*24. If the results of this formula is less than 1, there is possibly duplicate readings for that hour. If the result is 2 or more, it indicates that there are missing data points. Note that the first hour each December will be 6601 or greater since we do not use any hours March through November. Use Conditional Formatting in the Time Check column to highlight cells with numbers less than 0.9 and greater than 1.1 to quickly identify missing or duplicate data points.

You can also use Conditional Formatting to identify hours that are above freezing, below freezing but above the ECWT and temperatures equal to or below the ECWT. This can help determine if the missing data points are likely to cause a change in the ECWT. This shows the Conditional Formatting rule assuming the ECWT is shown in cell G5:


Edit Formatting Rule
Select a Rule Type:
Format all cells based on their values
Format only cells that contain
Format only top or bottom ranked values
Format only values that are above or below average
Format only unique or duplicate values
Use a formula to determine which cells to format
Edit the Rule Description:
Format all cells based on their values:
Format Style:
Icon Sets
Reverse Icon Order
Icon Style:
Show Icon Only
Display each icon according to these rules:
Icon
Value
Type
when value is
>=
32.1
Number
when < 32.1 and
>
=$G$5
Number
when <= Formula
OK
Cancel

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2024-03 Revisions to EOP-012-2

Formal Comment Period Open through November 5, 2024
Ballot Pools Forming through October 28, 2024

Now Available

A 20-day formal comment period for draft one of **EOP-012-3 Extreme Cold Weather Preparedness and Operations** is open through **8 p.m. Eastern, Tuesday, November 5, 2024**.

The Standards Committee approved the following waiver of provisions of the Standard Processes Manual (SPM) for Project 2024-03 Revisions to EOP-012-2:

- Informal comment period for SAR reduced from 30 days to as few as 15 days (Section 4.2);
- Initial formal comment and ballot period(s) reduced from 45 days to as little as 20 days, with the ballot pool formed concurrently during the first 10 days of the initial formal comment period, and with the ballot and non-binding poll of Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) conducted concurrently during the last 5 days of the comment period (Sections 4.8 and 4.9);
- Additional formal comment and ballot period(s) reduced from 30 days to as little as 15 days, with the ballot and non-binding poll of VRFs and VSLs conducted concurrently during the last 5 days of the comment period (Sections 4.9 and 4.12);
- Final ballot period(s) reduced from 10 days to as little as 5 days (Section 4.13).

Commenting

Use the Standards Balloting and Commenting System (SBS) to submit comments. An unofficial Word version of the comment form is posted on the project page.

Reminder Regarding Corporate RBB Memberships

Under the NERC Rules of Procedure, each entity and its affiliates is collectively permitted one voting membership per Registered Ballot Body Segment. Each entity that undergoes a change in corporate structure (such as a merger or acquisition) that results in the entity or affiliated entities having more than the one permitted representative in a particular Segment must withdraw the duplicate membership(s) prior to joining new ballot pools or voting on anything as part of an existing ballot pool. Contact ballotadmin@nerc.net to assist with the removal of any duplicate registrations.

Ballot Pools

Ballot pools are being formed through **8 p.m. Eastern, Monday, October 28, 2024.** Registered Ballot Body members can join the ballot pools here.

- *Contact NERC IT support directly at https://support.nerc.net/ (Monday – Friday, 8 a.m. - 5 p.m. Eastern) for problems regarding accessing the SBS due to a forgotten password, incorrect credential error messages, or system lock-out.*
- *Passwords expire every **6 months** and must be reset.*
- *The SBS **is not** supported for use on mobile devices.*
- *Please be mindful of ballot and comment period closing dates. We ask to **allow at least 48 hours** for NERC support staff to assist with inquiries. Therefore, it is recommended that users try logging into their SBS accounts **prior to the last day** of a comment/ballot period.*

Next Steps

Initial ballots for the standard and implementation plan, as well as a non-binding poll of the associated Violation Risk Factors and Violation Severity Levels will be conducted **October 31 – November 5, 2024**.

For information on the Standards Development Process, refer to the Standard Processes Manual.

For more information or assistance, contact Senior Standards Developer, Ben Wu (via email) or at 470-542-6882. Subscribe to this project's observer mailing list by selecting "NERC Email Distribution Lists" from the "Service" drop-down menu and specify “Project 2024-03 Revisions to EOP-012-2 observer list” in the Description Box.

North American Electric Reliability Corporation
3353 Peachtree Rd, NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

Comment Report

Project Name:	2024-03 Revisions to EOP-012-2 | Draft 1
Comment Period Start Date:	10/17/2024
Comment Period End Date:	11/5/2024
Associated Ballots:	2024-03 Revisions to EOP-012-2 | Draft 1 EOP-012-3 IN 1 ST 2024-03 Revisions to EOP-012-2 | Draft 1 Implementation Plan IN 1 OT

There were 60 sets of responses, including comments from approximately 165 different people from approximately 109 companies representing 10 of the Industry Segments as shown in the table on the following pages.

Questions

1. In paragraph 47 of the June 2024 Order, FERC directed NERC to revise EOP-012-2 to "ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them." In paragraph 47 of the June 2024 Order, FERC directed NERC to develop and submit modifications to the Generator Cold Weather Constraint definition of Reliability Standard EOP-012-2, to remove the references to "cost," "reasonable cost," "unreasonable cost," and "good business practices" and replace them with criteria that are objective, unambiguous, and auditable. In paragraph 54 of the June 2024 Order, FERC directs NERC to modify EOP-012-2 so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner. In paragraph 94 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R8, Part 8.1 of Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations (more than every five years) to verify that the declaration remains valid.

The drafting team has done the following to address the FERC directives:

1. Provided an updated definition of Generator Cold Weather Constrain

2. Updated language within Requirement R8

3. Provided EOP-012-3 Attachment 1 for clarity on expectations for registered entities

Do you agree with the approach and associated language the drafting team chose to meet the directives? Please provide any additional comments to consider. If you do not agree but believe the directives can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

2. In paragraph 68 of the June 2024 Order, FERC directed NERC to modify Requirement R7 of EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. FERC provided an example for how to address this directive, such as to require shorter timeframes for those units that have experienced issues and allow longer timeframes to address similar potential issues across a fleet for those units that have not experienced issues.

The drafting team modified Requirement R6 of EOP-012-2 to require a shorter deadline to implement corrective actions for those generating units that experience a Generator Cold Weather Reliability Event. Do you agree with the revised timelines? Please provide any additional comments to consider. If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team. Please review the posted draft ERO Enterprise document, EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process.

3. In paragraph 70 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC.

The drafting team provided language changes in Requirements R6 and R7 for a Corrective Action Plan extension process. Do you believe that the proposed language changes meet the intent of paragraph 70 of the FERC Order? Please provide any additional comments to consider. If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

4. In paragraph 72 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to clarify that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

The drafting team provided updated language in Requirement R2 Part 2.1 to address the issue of units in different stages of design and construction. February 16, 2023 was chosen as a date of demarcation as that was the date the Extreme Cold Weather Temperature was approved by FERC. Do you agree that revisions to Requirement R2 Part 2.1 address this directive? If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

5. In paragraph 72 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to clarify that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

The drafting team provided updated language in Requirement R2 Part 2.2 to address the issue of units in newer stages of design and construction. February 16, 2023 was chosen as a date of demarcation as that was the date the Extreme Cold Weather Temperature was approved by FERC. Units committed to design criteria on or after February 16, 2023 do not have the option to utilize a Corrective Action Plan but may still declare a Generator Cold Weather Constraint. Do you agree that revisions to Requirement R2 Part 2.2 address this directive? If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

6. In paragraph 76 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to address certain ambiguities by expanding on Requirement R7.1.1 and 7.1.2 to make it clear which corrective action plan implementation deadline applies when a generator owner must implement both remedying issues with existing and installing new freeze protection measures.

The drafting team clarified Requirement R7 for Corrective Action Plans developed in accordance with Requirements R1, R2, or R3. Do you agree that revisions to Requirement R7 address this directive to differentiate between the existing and new freeze protection measures? If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

7. The drafting team provided language in the Implementation Plan to address parts 3 through 5 of paragraph 4 of the June 2024 Order addressing FERC's concerns regarding urgency. The Standard language updates were written to meet the core directives in an effective and efficient manner while providing language that is objective, unambiguous, and auditable. With EOP-012-2 already effective October 1, 2024 (with the exception of Requirement R3), the changes made were intended to meet the FERC Directives without adding significantly to the efforts already in progress. Do you agree that the associated Implementation Plan meets the Directives? If you do not agree but believe the Directives can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

8. Do you agree with the Implementation Plan for EOP-012-3? If you do not agree, please propose an alternate implementation plan with a detailed explanation.

9. Do you agree that EOP-012-3 is cost effective to address the Directives in the FERC Order? If you do not agree, or if you agree but have suggestions for improvement to enable more cost-effective approaches, please provide your recommendation and, if appropriate, technical, or procedural justification.

10. Please provide any additional comments for the standard drafting team to consider, if desired.

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
BC Hydro and Power Authority	Adrian Andreoiu	1	WECC	BC Hydro	Hootan Jarollahi	BC Hydro and Power Authority	3	WECC
					Helen Hamilton Harding	BC Hydro and Power Authority	5	WECC
					Adrian Andreoiu	BC Hydro and Power Authority	1	WECC
MRO	Anna Martinson	1,2,3,4,5,6	MRO	MRO Group	Shonda McCain	Omaha Public Power District (OPPD)	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					Jamison Cawley	Nebraska Public Power District	1,3,5	MRO
					Jay Sethi	Manitoba Hydro (MH)	1,3,5,6	MRO
					Husam Al-Hadidi	Manitoba Hydro (System Preformance)	1,3,5,6	MRO
					Kimberly Bentley	Western Area Power Adminstration	1,6	MRO
					Jaimin Patal	Saskatchewan Power Coporation (SPC)	1	MRO
					George Brown	Pattern Operators LP	5	MRO
					Larry Heckert	Alliant Energy (ALTE)	4	MRO
					Terry Harbour	MidAmerican Energy Company (MEC)	1,3	MRO
					Dane Rogers	Oklahoma Gas and Electric (OG&E)	1,3,5,6	MRO
					Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO

					Michael Ayotte	ITC Holdings	1	MRO
					Andrew Coffelt	Board of Public Utilities-Kansas (BPU)	1,3,5,6	MRO
					Peter Brown	Invenergy	5,6	MRO
					Angela Wheat	Southwestern Power Administration	1	MRO
					Joshua Phillips	Southwest Power Pool	2	MRO
					Patrick Tuttle	Oklahoma Municipal Power Authority	4,5	MRO
Santee Cooper	Carey Salisbury	5		Santee Cooper	Paul Camilletti	Santee Cooper	1,3,5,6	SERC
					Kevin Baker	Santee Cooper	1,3,5,6	SERC
WEC Energy Group, Inc.	Christine Kane	3		WEC Energy Group	Christine Kane	WEC Energy Group, Inc.	3	RF
					Michelle Hribar	WEC Energy Group, Inc.	5	RF
					David Boeshaar	WEC Energy Group, Inc.	6	RF
					Candace Morakinyo	WEC Energy Group, Inc.	4	RF
ACES Power Marketing	Jodirah Green	1,3,4,5,6	MRO,NPCC,RF,SERC,Texas RE,WECC	ACES Collaborators	Bob Soloman	Hoosier Energy Electric Cooperative	1	RF
					Kevin Lyons	Central Iowa Power Cooperative	1	MRO
					Jason Procuniar	Buckeye Power, Inc.	4	RF
					Kris Carper	Arizona Electric Power Cooperative, Inc.	1	WECC
					Scott Brame	North Carolina Electric Membership Corporation	3,4,5	SERC
					Bill Pezalla	Old Dominion Electric Cooperative	3,4	SERC

					Nick Fogleman	Prairie Power, Inc.	1,3	SERC
					Jordan Mcclellan	Southern Illinois Power Cooperative	1	SERC
Eversource Energy	Joshua London	1		Eversource	Joshua London	Eversource Energy	1	NPCC
					Vicki O'Leary	Eversource Energy	3	NPCC
Entergy	Julie Hall	6		Entergy	Oliver Burke	Entergy - Entergy Services, Inc.	1	SERC
					Jamie Prater	Entergy	5	SERC
Electric Reliability Council of Texas, Inc.	Kennedy Meier	2		ISO/RTO Council Standards Review Committee (SRC)	Kennedy Meier	Electric Reliability Council of Texas, Inc.	2	Texas RE
					Joshua Phillips	Southwest Power Pool, Inc. (RTO)	2	MRO
					Helen Lainis	Independent Electricity System Operator	2	NPCC
					Kirsten Rowley	Midcontinent ISO, Inc.	2	RF
					Gregory Campoli	New York Independent System Operator	2	NPCC
					Thomas Foster	PJM Interconnection, L.L.C.	2	RF
					Darcy O'Connell	California ISO	2	WECC
					John Pearson	ISO New England, Inc.	2	NPCC
FirstEnergy - FirstEnergy Corporation	Mark Garza	4		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF

					Robert Loy	FirstEnergy - FirstEnergy Solutions	5	RF
					Mark Garza	FirstEnergy- FirstEnergy	1,3,4,5,6	RF
					Stacey Sheehan	FirstEnergy - FirstEnergy Corporation	6	RF
DTE Energy - Detroit Edison Company	Mohamad Elhusseini	5		DTE Energy	Mohamad Elhusseini	DTE Energy	5	RF
					Patricia Ireland	DTE Energy	4	RF
					Marvin Johnson	DTE Energy - Detroit Edison Company	3	RF
Southern Company - Southern Company Services, Inc.	Pamela Hunter	1,3,5,6	SERC	Southern Company	Matt Carden	Southern Company - Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
					Leslie Burke	Southern Company - Southern Company Generation	5	SERC
Black Hills Corporation	Rachel Schuldt	6		Black Hills Corporation - All Segments	Travis Grablander	Black Hills Corporation	1	WECC
					Josh Combs	Black Hills Corporation	3	WECC
					Rachel Schuldt	Black Hills Corporation	6	WECC
					Carly Miller	Black Hills Corporation	5	WECC
					Sheila Suurmeier	Black Hills Corporation	5	WECC
Northeast Power	Ruida Shu	1,2,3,4,5,6,7,8,9,10	NPCC	NPCC RSC	Gerry Dunbar	Northeast Power	10	NPCC

Coordinating Council						Coordinating Council		
					Deidre Altobell	Con Edison	1	NPCC
					Michele Tondalo	United Illuminating Co.	1	NPCC
					Stephanie Ullah-Mazzuca	Orange and Rockland	1	NPCC
					Michael Ridolfino	Central Hudson Gas & Electric Corp.	1	NPCC
					Randy Buswell	Vermont Electric Power Company	1	NPCC
					James Grant	NYISO	2	NPCC
					Dermot Smyth	Con Ed - Consolidated Edison Co. of New York	1	NPCC
					David Burke	Orange and Rockland	3	NPCC
					Peter Yost	Con Ed - Consolidated Edison Co. of New York	3	NPCC
					Salvatore Spagnolo	New York Power Authority	1	NPCC
					Sean Bodkin	Dominion - Dominion Resources, Inc.	6	NPCC
					Silvia Mitchell	NextEra Energy - Florida Power and Light Co.	1	NPCC
					Sean Cavote	PSEG	4	NPCC
					Jason Chandler	Con Edison	5	NPCC
					Tracy MacNicoll	Utility Services	5	NPCC
					Shivaz Chopra	New York Power Authority	6	NPCC
					Vijay Puran	New York State Department of Public Service	6	NPCC

					David Kiguel	Independent	7	NPCC
					Joel Charlebois	AESI	7	NPCC
					Joshua London	Eversource Energy	1	NPCC
					Jeffrey Streifling	NB Power Corporation	1,4,10	NPCC
					Joel Charlebois	AESI	7	NPCC
					John Hastings	National Grid	1	NPCC
					Erin Wilson	NB Power	1	NPCC
					James Grant	NYISO	2	NPCC
					Michael Couchesne	ISO-NE	2	NPCC
					Kurtis Chong	IESO	2	NPCC
					Michele Pagano	Con Edison	4	NPCC
					Bendong Sun	Bruce Power	4	NPCC
					Carvers Powers	Utility Services	5	NPCC
					Wes Yeomans	NYSRC	7	NPCC
Dominion - Dominion Resources, Inc.	Sean Bodkin	6		Dominion	Victoria Crider	Dominion Energy	3	NA - Not Applicable
					Sean Bodkin	Dominion Energy	6	NA - Not Applicable
					Steven Belle	Dominion Energy	1	NA - Not Applicable
					Barbara Marion	Dominion Energy	5	NA - Not Applicable
Western Electricity Coordinating Council	Steven Rueckert	10		WECC Entity Monitoring	Steve Rueckert	WECC	10	WECC
					Curtis Crews	WECC	10	WECC
Tim Kelley	Tim Kelley		WECC	SMUD and BANC	Nicole Looney	Sacramento Municipal Utility District	3	WECC
					Charles Norton	Sacramento Municipal Utility District	6	WECC

					Wei Shao	Sacramento Municipal Utility District	1	WECC
					Foung Mua	Sacramento Municipal Utility District	4	WECC
					Nicole Goi	Sacramento Municipal Utility District	5	WECC
					Kevin Smith	Balancing Authority of Northern California	1	WECC

1. In paragraph 47 of the June 2024 Order, FERC directed NERC to revise EOP-012-2 to "ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them." In paragraph 47 of the June 2024 Order, FERC directed NERC to develop and submit modifications to the Generator Cold Weather Constraint definition of Reliability Standard EOP-012-2, to remove the references to "cost," "reasonable cost," "unreasonable cost," and "good business practices" and replace them with criteria that are objective, unambiguous, and auditable. In paragraph 54 of the June 2024 Order, FERC directs NERC to modify EOP-012-2 so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner. In paragraph 94 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R8, Part 8.1 of Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations (more than every five years) to verify that the declaration remains valid.

The drafting team has done the following to address the FERC directives:

1. Provided an updated definition of Generator Cold Weather Constrain

2. Updated language within Requirement R8

3. Provided EOP-012-3 Attachment 1 for clarity on expectations for registered entities

Do you agree with the approach and associated language the drafting team chose to meet the directives? Please provide any additional comments to consider. If you do not agree but believe the directives can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	
MRO NSRF recommends there be an "approval by default" if the CEA does not respond within a given period, for example 30 days after submittal to CEA.	
Likes 1	JEA, 1, McClung Joseph
Dislikes 0	
Response	
Joshua London - Eversource Energy - 1, Group Name Eversource	
Answer	No
Document Name	
Comment	
Eversource supports the comments of EEI.	
Likes 0	

Dislikes 0	
Response	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	
R8.2 should be its own requirement. R8.4 timing is too restrictive. Suggest adding a statement with a timeframe (150 days). A CEA rejection of a CAP could force an unplanned maintenance outage and be longer than expected timeframes.	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Manitoba Hydro supports BC Hydro's comment: "BC Hydro is supportive of the revisions to the revised Generator Cold Weather Constraint definition. However, to add clarity on Freeze Protection Measures, BC Hydro recommends retaining the following wording "Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions" in EOP-012-3 associated documentation, such as the Technical Rationale." And "Please also clarify in the language of the Requirement whether these are calendar or business days."	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	

Duke Energy agrees with and supports NAGF's position on modifications to the wording of R8 and their stance on the lack of CEA obligations related to the approval process.

Duke Energy agrees in general with changes to the definition of a Generator Cold Weather Constraint and the use of Attachment 1. Attachment 1 does not though provide sufficient guidance for freeze protection modifications that are unsustainable due to cost. While Attachment Sections 3a through 3c does offer guidance, it provides no guidance for modifications that are financially unfeasible. Please provide additional guidance regarding unsustainability due to cost.

Duke Energy does not support the pre-approval requirement for declarations. The declaration process should be driven by clear criteria and the acceptability of declarations should be evaluated as part of the audit process. Please provide clear guidance and criteria for declarations as stated.

The status of the CEA in the declaration process is an area of concern. The CEA by statute, perform the enforcement role for standards published by NERC. The preapproval process places the CEA in the position of a performer or approver on implementation of the standard. The SDT should modify the process to reflect a more amiable solution that excludes the CEA.

Likes 0	
Dislikes 0	

Response

Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples

Answer	No
Document Name	

Comment

Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI), the Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF), and the North American Generator Forum (NAGF) on question 1

Likes 0	
Dislikes 0	

Response

Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments

Answer	No
Document Name	

Comment

Black Hills Corporation supports the comments submitted by NAGF and EEI.

Likes 0	

Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	No
Document Name	
Comment	
TEPC agrees with EEI's comments and criteria used to determine a Generator Cold Weather Constraint. *The definition for Generator Cold Weather Constraints contained in the previous version provided the industry with useful criteria that has been lost in the revised version.*	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	
Comment	
Dominion Energy supports EEI comments.	

Likes 0	
Dislikes 0	

Response

Chantal Mazza - Chantal Mazza On Behalf of: Junji Yamaguchi, Hydro-Quebec (HQ), 1, 5; Nicolas Turcotte, Hydro-Quebec (HQ), 1, 5; - Chantal Mazza	
Answer	No
Document Name	

Comment

HQ supports BC Hydro's comment: "BC Hydro is supportive of the revisions to the revised Generator Cold Weather Constraint definition. However, to add clarity on Freeze Protection Measures, BC Hydro recommends retaining the following wording "Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions" in EOP-012-3 associated documentation, such as the Technical Rationale." And "Please also clarify in the language of the Requirement whether these are calendar or business days.".

HQ supports NBPower's comment: "The pre-approved Generator Cold Weather Constraints (GCWCs) in Attachment 1 could be problematic in some jurisdictions, since Requirement R8 and Attachment 1 are referenced for Requirement R2 Part 2.2 for new designs on a go-forward basis. In particular, the pre-approved GCWC should not be set up in such a way as to exempt generating unit developers from doing proper due diligence. At least for future designs (Requirement R2 Part 2.2) all Generator Cold Weather Constraints should be assessed on a case-by-case basis. Pre-approved GCWCs should be avoided, or if used at all, limited to existing or already committed designs, since technology and the needs of the grid may be expected to change in the future and existing pre-approvals may no longer be appropriate."

HQ supports OPG's comments "Additional clarification is required regarding GCWC CEA applicability/validity confirmation & determination implications for unit present/future operation.

Please clarify the role of CEA – review for constraint presence, validity confirmation, or approval, and the requirements the CEA need to satisfy to perform it's role.

Attachment 1 bullet #3 appears to be the BA purview and not the CEA.

In the context of this standard a freeze protection measure can negatively impact the revenue of a market participant, yet still be required to be implemented for compliance purposes. Please explain how was derived the "more than three percent" criterion and the justification for argument that it will fit all the market participants, from any geographical location.

Attachment 1 last paragraph state that "An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.".

The overall intent of the Extreme Cold Weather Preparedness and Operations standard is to:" Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature;"

By definition, the "**Generator Cold Weather Constraint** – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components.". As written this appears to be an actual requirement to operate at the ECWT, which cannot be reconciled with an approved Generator Cold Weather Constraint declaration."

There is a risk for future generation designs introduced by Attachment 1 via geographical limitation for specific technologies in the Pre-Approved Generator Cold Weather Constraints list.

Likes 0	
Dislikes 0	
Response	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	No
Document Name	
Comment	
PG&E Supports NAGF recommended modifications to the drafted R8 language.	
Likes 0	
Dislikes 0	
Response	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	No
Document Name	
Comment	
NRG is in concurrence that the direction that the SDT has taken to address the ambiguity of the language of the constraints is sound as it has allowed for acceptance of known technical constraints that the industry has identified. It also has provided sound examples of those examples that may be presented on case by case basis. However, strict guidance should be provided to reviewers to ensure consistency of acceptance of these constraints for the case by case basis. The process may also need to be modified that if an Extreme Cold Weather Reliability event continually occurs due to same mechanism-say wind turbine blade icing or PV icing- that a single declaration for the year should suffice and not required for each event and filed through the required approval process.	
Likes 0	
Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	No
Document Name	
Comment	

NRG is in concurrence that the direction that the SDT has taken to address the ambiguity of the language of the constraints is sound as it has allowed for acceptance of known technical constraints that the industry has identified. It also has provided sound examples of those examples that may be presented on case by case basis. However, strict guidance should be provided to reviewers to ensure consistency of acceptance of these constraints for the case by case basis. The process may also need to be modified that if an Extreme Cold Weather Reliability event continually occurs due to same mechanism-say wind turbine blade icing or PV icing- that a single declaration for the year should suffice and not be required for each event and filed through the required approval process.

Likes 0	
Dislikes 0	

Response

Donna Wood - Tri-State G and T Association, Inc. - 1

Answer	No
Document Name	

Comment

Tri-State supports MRO NSRF Comment.

Likes 0	
Dislikes 0	

Response

Ruchi Shah - AES - AES Corporation - 5

Answer	No
Document Name	

Comment

While AES US Renewables agrees with the approach of updating definition of Generator Cold Weather Constraint, we believe there are still some gaps in the proposed R8 as well as Attachment 1 that need to be addressed:

- The 24 calendar month timeline for reviewing GCWC declaration that has been validated by CEA is too frequent. We believe that at a minimum, it should be set to 36 calendar months. We prefer 60 months if possible since a lot of the pre-approved constraints listed in Attachment 1 for renewable generators are likely not going to be alleviated anytime soon as OEMs are not actively working to address them (unlike the IEEE 2800 requirements where various ISO/RTOs are driving the change requirements due to being perceived as more impactful and urgent).
    - It was mentioned during the 10/24/2024 webinar that 24-calendar month reviews do not require submittal to CEA for reviews and approvals. However, it is currently not clear on what the process entails when a constraint declaration is no longer valid. Is the GO required to notify the CEA that the constraint declaration that was approved is no longer valid due to solutions being available to mitigate the constraint? Since the Constraint and CAP Process document stated that NERC will be sending NERC a quarterly report, we are assuming that NERC/CEA will have to keep track of retirement of constraint declarations in addition to what they have approved/denied.

- Neither R8 nor Attachment 1 addresses the timeline for implementing the mitigation if the declared constraint is no longer valid. We have concerns about situations where one vendor or OEM has developed a solution for the constraint, but the amount of investment needed to incorporate that solution is too high and impacts revenue and profitability negatively in operating the generation facility. How will this type of scenario be taken into account under the proposed Attachment 1 criteria?
- Will the pre-approved list in Attachment 1 be revised if new constraints are identified in the future? Or if commercially viable solutions to those constraints appear in the future, will those constraints be removed from the pre-approved list? We are concerned about the static nature of the pre-approved list as it can greatly impact the ability to declare constraints for projects that are in the interconnection queue at various ISO/RTOs currently.
- In the Constraint and CAP Process document provided along with EOP-012-3 proposed draft and Implementation Plan, there is no mention on what registered entities can do if their constraint declaration is denied related to R2.2. The current language only focused on updating CAPs related to R6.1 and R7.1. As written currently, R2.2 does not have the option to create a corrective action plan.
- Under the proposed Attachment 1, item 3 (c) allows constraint declaration if application of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit. We would like to find out if further guidance can be provided either in Attachment 1 or Technical Rationale for this constraint criteria in regards to financial/cost impacts. This question was posed during the 10/24/2024 webinar and the answer provided was not clear and it was suggested that it can be evaluated on a case-by-case basis.
- More clarification is needed on a few constraints listed under Attachment 1:
- "*Wind turbine towers that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1.*"
- Does structural limitations imply design limitations? Please clarify that or include clarification in the Technical Rationale document.
- "*Heat tracing or other de-icing technologies for wind turbine blades that are not available in the Generator Owner's location.*"
- Does the phrase "not available" also mean not effective? There is a difference between both. There are currently some not-so-effective methods to prevent icing (like spraying the blades with anti-icing coatings). Are Generator Owners required to use solutions that are not effective or can it be part of constraint declaration?
- Does the phrase "Generator Owner's location" mean regionally? For example, does it mean if a wind turbine uses a solution that is available in New York, and the solution is not used in Texas, the Generator Owner can declare constraint that it is not available for wind turbines in Texas? Or should the constraint be modified to: "*Heat tracing or other de-icing technologies for wind turbine blades that are not available in **all NERC regions***"? Our rationale is that if it is not available in the US, but available in Europe, then, we are allowed to declare constraint. It should be based on availability within each country.

Likes 0	
Dislikes 0	

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer	No
Document Name	

Comment

The NAGF recommends that R8 be modified to address the following issues:

a. Requirement 8.2 should not be part of R8 as it is a separate requirement and requires actions different than R8;

b. The language used in 8.4, specifically as it relates to R6, is not clear, or it may require an entity to have a CAP implemented on the day they are notified that the declaration has been rejected;

c.The time stated in 8.1 does not agree with the process document posted in support of the standard. In addition, the document requires an entity to coordinate with the CEA before filing a declaration, without any obligation on the CEA to respond in a timely manner. These two documents, the requirement in the standard and the process document, must be coordinated before Requirement R8 is clear, unambiguous and enforceable.

To address these issues, the NAGF recommends the following language be used:

R8. Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

8.1. Submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 days of determining that the Generator Cold Weather Constraint is applicable. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit the Generator Cold Weather Constraint declaration(s) no later than 15 days after commercial operation;

8.2 Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable; and

8.3 If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed;

8.3.1 Within 150 days or longer as agreed to by the CEA to meet compliance with R6 to begin the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid, or

8.3.2 Consistent with Requirement R7 Part 7.1 or longer as agreed to by the CEA, to begin from the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid.

R9. Review any Generator Cold Weather Constraint declaration validated by the CEA every 24 calendar months to determine if it remains valid under Attachment 1.

The NAGF has significant concerns related to the requirement to modify or repair equipment within an extremely confined period under these requirements. This issue is discussed in further detail under question 2.

The NAGF does not see any process that will be followed in the event the review of the declaration determines that it is now possible to correct, there are no timelines or other process. Is it the intent to allow the GO to determine when this will be implemented without any notifications to the CEA?

The NAGF also has concerns about situations where one vendor or OEM has developed a solution for the constraint, but the amount of investment needed to incorporate that solution is too high and impacts revenue and profitability negatively for operating the generation facility. How will this type of scenario be considered under the proposed Attachment 1 criteria?

The NAGF requests additional clarification regarding the constraints in Attachment 1:

As an example, for the constraint “Wind turbine towers that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1.” Do structural limitations imply design limitations? Please clarify that or include clarification in the Technical Rationale document.

As another example for the constraint “Heat tracing or other de-icing technologies for wind turbine blades that are not available in the Generator Owner’s location.” Does the phrase “not available” also mean not effective? There is a difference between both. There are currently some not-so-effective methods to prevent icing (like spraying the blades with anti-icing coatings). Since cost is not to be considered, are Generator Owners required to use solutions that are not effective if they are available, or can it be part of constraint declaration?

Does the phrase “Generator Owner’s location” mean regionally? For example, does it mean if a wind turbine uses a solution that is available in New York, and the solution is not used in Texas, the Generator Owner can declare a constraint that it is not available for wind turbines in Texas? Or should the constraint be modified to: “Heat tracing or other de-icing technologies for wind turbine blades that are not available in all NERC regions”? Our rationale is that if it is not available in the US, but available in Europe, then, we are allowed to declare constraint. It should be based on availability within each country.

The NAGF looks forward to working with the SDT to address these issues and concerns.	
Likes 0	
Dislikes 0	
Response	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	

While Avista supports in part the approach that the Drafting Team has taken to address FERC Commission Directives contained in the June 27, 2024 FERC Order, Approving Extreme Cold Weather Reliability Standard EOP-012-2 And Directing Modifications, we do not support the proposed definition for Generator Cold Weather Constraint. The definition for Generator Cold Weather Constraints contained in the previous version provided the industry with useful criteria that has been lost in the revised version. And while we see value in the information provided in Attachment 1, that information could be contained in another technical document supporting this standard (i.e., Technical Rationale or Implementation Guidance), if the definition and criteria were revised to more closely align to the directives contained in the Order. To address our concerns, we offer the following edits (in boldface) to the Generator Cold Weather Constraints definition:

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions. (*Strikethroughs have been omitted for clarity*)

Criteria used to determine a **Generator Cold Weather Constraint shall consider the following:**

{C}· **A determination through an engineering analysis that the freeze protection measures lack reasonable assurances of efficacy and there is no record that such protections have been effectively utilized on** generating units **of a** comparable types in regions that experience similar winter climate conditions;

{C}· **A determination through engineering analysis that there are no available freeze protection measures, commercially available, that have been proven to be effective at mitigating the effects of the Extreme Cold Weather Temperature identified in the region where the resource is installed**; or

{C}· **A determination through an engineering economic analysis has been made that determines that the implementation of freeze protection measures necessary to mitigate the effects of the Extreme Cold Weather Temperature, while feasible, would result in the early retirement of the resource.**

Likes 0	
Dislikes 0	
Response	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	

Answer	No
Document Name	
Comment	
Ameren agrees with EEI's and NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	No
Document Name	
Comment	

NB Power supports BC Hydro's comment: "BC Hydro is supportive of the revisions to the revised Generator Cold Weather Constraint definition. However, to add clarity on Freeze Protection Measures, BC Hydro recommends retaining the following wording "Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions" in EOP-012-3 associated documentation, such as the Technical Rationale." And "Please also clarify in the language of the Requirement whether these are calendar or business days.".

The pre-approved Generator Cold Weather Constraints (GCWCs) in Attachment 1 could be problematic in some jurisdictions, since Requirement R8 and Attachment 1 are referenced for Requirement R2 Part 2.2 for new designs on a go-forward basis. In particular, the pre-approved GCWC should not be set up in such a way as to exempt generating unit developers from doing proper due diligence. At least for future designs (Requirement R2 Part 2.2) all Generator Cold Weather Constraints should be assessed on a case-by-case basis. Pre-approved GCWCs should be avoided, or if used at all, limited to existing or already committed designs, since technology and the needs of the grid may be expected to change in the future and existing pre-approvals may no longer be appropriate.

Additional clarification is required regarding GCWC CEA applicability/validity confirmation & determination implications for unit present/future operation.

Please clarify the role of CEA – review for constraint presence, validity confirmation, or approval, and the requirements the CEA need to satisfy to perform it's role.

Attachment 1 bullet #3 appears to be the BA purview and not the CEA.

In the context of this standard a freeze protection measure can negatively impact the revenue of a market participant, yet still be required to be implemented for compliance purposes. Please explain how was derived the "more than three percent" criterion and the justification for argument that it will fit all the market participants, from any geographical location.

Attachment 1 last paragraph state that "An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.".

The overall intent of the Extreme Cold Weather Preparedness and Operations standard is to:" Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature;"

By definition, the "**Generator Cold Weather Constraint** – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components.". As written this appears to be an actual requirement to operate at the ECWT, which cannot be reconciled with an approved Generator Cold Weather Constraint declaration."

There is a risk for future generation designs introduced by Attachment 1 via geographical limitation for specific technologies in the Pre-Approved Generator Cold Weather Constraints list.

Likes 0	
Dislikes 0	

Response

Mike Magruder - Avista - Avista Corporation - 1

Answer	No
Document Name	

Comment

While we support in part the approach that the Drafting Team has taken to address FERC Commission Directives contained in the June 27, 2024 FERC Order, Approving Extreme Cold Weather Reliability Standard EOP-012-2 And Directing Modifications, we do not support the proposed definition for Generator Cold Weather Constraint. The definition for Generator Cold Weather Constraints contained in the previous version provided the industry with useful criteria that has been lost in the revised version. And while we see value in the information provided in Attachment 1, that information could be contained in another technical document supporting this standard (i.e., Technical Rationale or Implementation Guidance), if the definition and criteria were revised to more closely align to the directives contained in the Order. To address our concerns, we offer the following edits (in boldface) to the Generator Cold Weather Constraints definition:

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions. (*Strikethroughs have been omitted for clarity*)

Criteria used to determine a **Generator Cold Weather Constraint shall consider the following:**

1}· **A determination through an engineering analysis that the freeze protection measures lack reasonable assurances of efficacy and there is no record that such protections have been effectively utilized on** generating units **of a** comparable types in regions that experience similar winter climate conditions;

2}· **A determination through engineering analysis that there are no available freeze protection measures, commercially available, that have been proven to be effective at mitigating the effects of the Extreme Cold Weather Temperature identified in the region where the resource is installed**; or

3}· **A determination through an engineering economic analysis has been made that determines that the implementation of freeze protection measures necessary to mitigate the effects of the Extreme Cold Weather Temperature, while feasible, would result in the early retirement of the resource.**

Likes 0	
Dislikes 0	

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer	No
Document Name	

Comment

While EEI supports in part the approach that the DT has taken to address FERC Commission Directives contained in the June 27, 2024 FERC Order, Approving Extreme Cold Weather Reliability Standard EOP-012-2 And Directing Modifications, we do not support the proposed definition for Generator Cold Weather Constraint. The definition for Generator Cold Weather Constraints contained in the previous version provided the industry with useful criteria that has been lost in the revised version. And while we see value in the information provided in Attachment 1, that information could be contained in another technical document supporting this standard (i.e., Technical Rationale or Implementation Guidance), if the definition and criteria were revised to more closely align to the directives contained in the Order. To address our concerns, we offer the following edits (in boldface) to the Generator Cold Weather Constraints definition:

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions.

Criteria used to determine a **Generator Cold Weather Constraint shall consider the following:**

- **A determination through an engineering analysis that the freeze protection measures lack reasonable assurances of efficacy and there is no record that such protections have been effectively utilized on** generating units **of a** comparable types in regions that experience similar winter climate conditions;
- **A determination through engineering analysis that there are no available freeze protection measures, commercially available, that have been proven to be effective at mitigating the effects of the Extreme Cold Weather Temperature identified in the region where the resource is installed**; or
- **A determination through an engineering economic analysis has been made that determines that the implementation of freeze protection measures necessary to mitigate the effects of the Extreme Cold Weather Temperature, while feasible, would result in the early retirement of the resource.**

Likes 0	
Dislikes 0	

Response

David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers

Answer	No
Document Name	

Comment	
Vistra agrees with comments made by Duke Energy.	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Most of the definition on Page 2 of the redlined document removes Generator Cold Weather Constraint without directing to Attachment 1. Also, depending on the CEA, a constraint may be applicable to the facility but disagreed upon by the CEA, in which the facility would have to update its corrective action plan without being able to contest the analysis of the CEA. Recommend that any Constraint that is requested be handled by a single senior management official with overall authority and responsibility for leading and managing implementation of and continuing adherence to the requirements within the NERC EOP-012 cold weather standards and not at the Compliance Enforcement Authority (CEA).	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
MP agrees with several aspects of Attachment 1 but aligns more closely with the edits EEI provided for the Cold Weather Constraint definition. EEI refers to effective freeze protections on units of comparable types in regions with similar winter climate conditions, commercially available and effective freeze protection for the region, and evaluation of where freeze protection installation could force early retirement. Early retirement of units will not support overall grid reliability.	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	

Answer	No
Document Name	

Comment

The ISO/RTO Council (IRC) Standards Review Committee (SRC) (consisting, for purposes of these comments, of CAISO, ERCOT, IESO, ISO-NE, PJM, MISO, NYISO, and SPP) generally agrees with the updated definition of Generator Cold Weather Constraint, the updated language within Requirement R8, and the provision of Attachment 1 to provide further detail on constraints. However, the SRC recommends the following revisions to Attachment 1:

-- Rename the first list of constraints “Potential Generator Cold Weather Constraints that Would be Candidates for Accelerated Approval” to better reflect the CEA review that is required for these constraints.

-- Revise the second constraint on the accelerated approval list to read as follows to clarify that it is not intended to address shipping difficulties: “Heat tracing or other de-icing technologies for wind turbine blades that the supplier will not sell or otherwise provide to the Generator Owner.”

-- Revise the fourth constraint on the accelerated approval list to read as follows to allow for the possibility of the future development of technically feasible solar panel de-icing technology: “Applying heat to remove accumulated frozen precipitation on solar panels when generating the heat would require 50% or more of the amount of energy the solar panels would produce in the absence of the accumulated frozen precipitation.”

The SRC recommends that items 3.a and 3.b of the case-by-case constraint list be consolidated into a single item that reads as follows: “The application of freeze protection measures would result in the imminent premature retirement of an existing generating unit.” This would help clarify that (for example) changing a unit’s planned retirement date from a day 20 years in the future to a day 19 years in the future does not justify a constraint, while also avoiding any potential ambiguity regarding what constitutes proper publication of a retirement date.

The SRC recommends that the three percent threshold used in items 3.d and 3.e of the case-by-case constraint list be replaced with language that would allow the CEA to determine the appropriate threshold for the particular region or portion of a region that would be impacted by the requested constraint. This would allow the CEA to consider whether, for example, a reduction in summer net dependable capacity is likely to have a more significant reliability impact the farther south a generating unit is located.

Regardless of the threshold that is ultimately selected, the SRC recommends that item 3.d be modified by adding language limiting item 3.d to performance reductions that occur “during weather conditions other than extreme cold weather conditions.” This would help clarify that no constraint exists if a freeze protection measure would cause a performance reduction only during extreme cold weather conditions.

The SRC recommends that the last paragraph in Attachment 1 be revised to read as follows to clarify that the relevant Reliability Coordinator or Balancing Authority may provide information that would assist the CEA in evaluating certain types of constraints and to clarify that a valid constraint declaration does not necessarily carry any weight for purposes of any non-EOP-012 regulatory regimes that may apply to the unit in question:

When submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply. ***If a Generator Cold Weather Constraint declaration indicates that the application of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk-Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s), the documentation that defends and supports the constraint should include any assessment that the applicable Balancing Authority or Reliability Coordinator might agree to provide concerning the impact to the reliability of the Bulk-Power System if the constraint were to be granted.*** An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather

Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3***, and does not in any way purport to relieve the Generator Owner of any other legal obligations or requirements outside of the requirements of EOP-012-3, including tariff, regulatory, or statutory obligations or requirements***.

The SRC also recommends that Part 8.1 of Requirement R8 be revised to require units beginning commercial operations to submit constraint declarations on or before the commercial operation date rather than 15 days after commercial operation. This would help minimize the amount of time between the commercial operation date and the CEA determination regarding the validity of the constraint.

Additionally, the SRC recommends that Part 8.2 be revised as follows to require Generator Owners to react to knowledge of changed circumstances outside of the 24-month review cycle: "Review any Generator Cold Weather Constraint declaration validated by the CEA every 24 calendar months ***and upon gaining actual knowledge of a material change in the circumstances that formed the basis for the Generator Cold Weather Constraint declaration*** to determine . . ."

Finally, the SRC recommends that Part 8.4 be clarified by ending the first sentence at "Part 7.1" and turning the remaining language into a separate sentence, as follows: " . . . Part 7.1. The deadlines from the Part 6.1 and Part 7.1 timetables shall be calculated based on the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid."

Likes 0	
Dislikes 0	

Response

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5

Answer	No
Document Name	

Comment

While NV Energy supports in part the approach that the DT has taken to address FERC Commission Directives contained in the June 27, 2024 FERC Order, Approving Extreme Cold Weather Reliability Standard EOP-012-2 And Directing Modifications, we do not support the proposed definition for Generator Cold Weather Constraint. The definition for Generator Cold Weather Constraints contained in the previous version provided the industry with useful criteria that has been lost in the revised version. And while we see value in the information provided in Attachment 1, that information could be contained in another technical document supporting this standard (i.e., Technical Rationale or Implementation Guidance), if the definition and criteria was revised to more closely aligned to the directives contained in the Order. To address our concerns, we offer the following edits (in boldface) to the Generator Cold Weather Constraints definition:

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions. (*Strikethroughs have been omitted for clarity*)

Criteria used to determine a **Generator Cold Weather Constraint shall consider the following:**

- **A determination through an engineering analysis that the freeze protection measures lack reasonable assurances of efficacy and there is no record that such protections have been effectively utilized on** generating units **of a** comparable types in regions that experience similar winter climate conditions;
- **A determination through engineering analysis that there are no available freeze protection measures, commercially available, that have been proven to be effective at mitigating the effects of the Extreme Cold Weather Temperature identified in the region where the resource is installed**; or
- **A determination through an engineering economic analysis has been made that determines that the implementation of freeze protection measures necessary to mitigate the effects of the Extreme Cold Weather Temperature, while feasible, would result in the early retirement of the resource.**

NV Energy also recommends there be an “approval by default” if the CEA does not respond within a given period, for example 30 days after submittal to CEA.

Likes 0	
Dislikes 0	

Response

Selene Willis - Edison International - Southern California Edison Company - 5

Answer	No
Document Name	

Comment

See EEI Comments

Likes 0	
Dislikes 0	

Response

Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC

Answer	No
Document Name	

Comment

PNM agrees with the comments of EEI:

While EEI supports in part the approach that the DT has taken to address FERC Commission Directives contained in the June 27, 2024 FERC Order, Approving Extreme Cold Weather Reliability Standard EOP-012-2 And Directing Modifications, we do not support the proposed definition for Generator Cold Weather Constraint. The definition for Generator Cold Weather Constraints contained in the previous version provided the industry with useful criteria that has been lost in the revised version. And while we see value in the information provided in Attachment 1, that information could be contained in another technical document supporting this standard (i.e., Technical Rationale or Implementation Guidance), if the definition and criteria were revised to more closely align to the directives contained in the Order. To address our concerns, we offer the following edits (in boldface) to the Generator Cold Weather Constraints definition:

Generator Cold Weather Constraint – *Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions. (Strikethroughs have been omitted for clarity)*

Criteria used to determine a ***Generator Cold Weather Constraint shall consider the following:***

A determination through an engineering analysis that the freeze protection measures lack reasonable assurances of efficacy and there is no record that such protections have been effectively utilized on *generating units* ***of a*** *comparable types in regions that experience similar winter climate conditions;*

A determination through engineering analysis that there are no available freeze protection measures, commercially available, that have been proven to be effective at mitigating the effects of the Extreme Cold Weather Temperature identified in the region where the resource is installed*; or*

{C}· ***A determination through an engineering economic analysis has been made that determines that the implementation of freeze protection measures necessary to mitigate the effects of the Extreme Cold Weather Temperature, while feasible, would result in the early retirement of the resource.***

Likes 0	
Dislikes 0	

Response

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company

Answer	No
Document Name	

Comment

Southern Company Agrees with the comments from EEI and NAGF.

Likes 0	
Dislikes 0	

Response

Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	
Comment	

Invenergy appreciates the SDT's approach to addressing the FERC directives and we believe the changes in EOP-012-3 work toward meeting those directives. Still, we have concerns regarding the administrative burden placed upon Generator Owners and we would like to offer the recommendations below that provide additional clarity and/or address the directives in an equally effective manner.

Definition:

Consider revising the definition to read, "Any condition, subject to validation by the Compliance Enforcement Authority, that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components." This clarifies that certain criteria must be validated for a condition to be considered a Generator Cold Weather Constraint.

R8:

Invenergy recommends simplifying R8.1 to read, "Submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 days of determining that the Generator Cold Weather Constraint is applicable." As drafted, the multiple constraint declaration tracks introduce confusion for no real reliability gain.

Invenergy recommends allowing 36 months for the revalidation of any constraint declaration. Constraint declarations are unlikely to change frequently. Additionally, please clarify in R8.2 if the revalidation of constraint declarations is to occur 24 calendar months following the date of CEA validation. It may be beneficial to create a separate requirement for the actions currently prescribed in R8.2.

Attachment 1:

If the intent of the standard is that all Generator Cold Weather Constraint declarations must be submitted to the CEA for validation, then Invenergy recommends replacing "Pre-Approved Generator Cold Weather Constraints" with "Known Generator Cold Weather Constraints."

The final two bullets under the Pre-Approved Generator Cold Weather Constraint header seem to refer more to possible solutions to a constraint, rather than the circumstances that constitute the constraint. Consider reframing the bullets to reference the lack of deployable solutions to remove accumulated frozen precipitation on solar panels or on combustion turbine inlet air filters.

Invenergy is worried that the disregard in Attachment 1 of commercial concerns that do not rise to the level of premature retirement of an existing facility places unreasonable expectations on the Generator Owner to procure equipment or apply freeze protection measures that, based on the Generator Owner's operating experience or analysis, may not suit the needs of the Generator Owner. We recommend that the language make more accommodations for Generator Owners to be able to pursue reliable generation in a manner that best fits their unique circumstances.

We recommend striking the final sentence of Attachment 1 as it does not provide any additional criteria relevant to the declaration of a constraint.

Likes 0	
Dislikes 0	
Response	

Rhonda Jones - Invenergy LLC - 5

Answer	No
Document Name	

Comment

Invenergy appreciates the SDT's approach to addressing the FERC directives and we believe the changes in EOP-012-3 work toward meeting those directives. Still, we have concerns regarding the administrative burden placed upon Generator Owners and we would like to offer the recommendations below that provide additional clarity and/or address the directives in an equally effective manner.

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Attachment 1:

If the intent of the standard is that all Generator Cold Weather Constraint declarations must be submitted to the CEA for validation, then Invenergy recommends replacing "Pre-Approved Generator Cold Weather Constraints" with "Known Generator Cold Weather Constraints."

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We recommend striking the final sentence of Attachment 1 as it does not provide any additional criteria relevant to the declaration of a constraint.

Likes 0	
Dislikes 0	

Response

Robert Blackney - Edison International - Southern California Edison Company - 1

Answer	No

Document Name	
Comment	
See comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Stephanie Kenny - Edison International - Southern California Edison Company - 6	
Answer	No
Document Name	
Comment	
See EEI comments	
Likes 0	
Dislikes 0	
Response	
Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	
Comment	
Enel North America agrees with the MRO NSRF recommendation that there be an “approval by default” if the CEA does not respond within a given period, for example 30 days after submittal to CEA.	
Likes 0	
Dislikes 0	
Response	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	
Comment	

OPG supports BC Hydro's comment: "BC Hydro is supportive of the revisions to the revised Generator Cold Weather Constraint definition. However, to add clarity on Freeze Protection Measures, BC Hydro recommends retaining the following wording "Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions" in EOP-012-3 associated documentation, such as the Technical Rationale." And "Please also clarify in the language of the Requirement whether these are calendar or business days.".

OPG supports NBPower's comment: "The pre-approved Generator Cold Weather Constraints (GCWCs) in Attachment 1 could be problematic in some jurisdictions, since Requirement R8 and Attachment 1 are referenced for Requirement R2 Part 2.2 for new designs on a go-forward basis. In particular, the pre-approved GCWC should not be set up in such a way as to exempt generating unit developers from doing proper due diligence. At least for future designs (Requirement R2 Part 2.2) all Generator Cold Weather Constraints should be assessed on a case-by-case basis. Pre-approved GCWCs should be avoided, or if used at all, limited to existing or already committed designs, since technology and the needs of the grid may be expected to change in the future and existing pre-approvals may no longer be appropriate."

OPG has the following comments: Additional clarification is required regarding GCWC CEA applicability/validity confirmation & determination implications for unit present/future operation.

Please clarify the role of CEA – review for constraint presence, validity confirmation, or approval, and the requirements the CEA need to satisfy to perform it's role.

Attachment 1 bullet #3 appears to be the BA purview and not the CEA.

In the context of this standard a freeze protection measure can negatively impact the revenue of a market participant, yet still be required to be implemented for compliance purposes. Please explain how was derived the "more than three percent" criterion and the justification for argument that it will fit all the market participants, from any geographical location.

Attachment 1 last paragraph state that "An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.".

The overall intent of the Extreme Cold Weather Preparedness and Operations standard is to:" Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature;"

By definition, the "**Generator Cold Weather Constraint** – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components.". As written this appears to be an actual requirement to operate at the ECWT, which cannot be reconciled with an approved Generator Cold Weather Constraint declaration."

There is a risk for future generation designs introduced by Attachment 1 via geographical limitation for specific technologies in the Pre-Approved Generator Cold Weather Constraints list.

Likes 0	
Dislikes 0	

Response

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro

Answer	Yes
Document Name	

Comment

BC Hydro appreciates the drafting team's efforts and the opportunity to comment, and offers the following comments and suggestions:

1. BC Hydro is supportive of the revisions to the revised Generator Cold Weather Constraint definition. However, to add clarity on Freeze Protection Measures, BC Hydro recommends retaining the following wording "*Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions"* in EOP-012-3 associated documentation, such as the Technical Rationale. Please also clarify in the language of the Requirement whether these are calendar or business days.
2. For Requirement R8 Part 8.1 BC Hydro recommends adding "or" after "is applicable" to further clarify the two separate timeline requirements.

Likes 2	JEA, 1, McClung Joseph; SaskPower, 1, Guttormson Wayne
Dislikes 0	

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter

Answer	Yes
Document Name	

Comment

FirstEnergy has no concerns.

Likes 0	
Dislikes 0	

Response

Andrew Smith - APS - Arizona Public Service Co. - 5

Answer	Yes
Document Name	

Comment

AZPS agrees with the approach.

Likes 0	
Dislikes 0	

Response

Carver Powers - Utility Services, Inc. - 4

Answer	Yes
Document Name	

Comment
R6 contains the phrase “The Generator Owner shall” in two places. Suggest deleting the second phrase as follows: ***R6.*** *Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop and implement a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed before the first day of July, but not more than 150 days after the Generator Cold Weather Reliability Event. The Generator Owner shall:* Suggest modifying R6.2 as follows (replacing “where” for “if”) for clarity: ***6.2.*** *Update the Corrective Action Plan action(s) and timetable(s), with justification, and submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval if where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 6.1. The submitted Corrective Action Plan extension request shall include the following;*

Likes 0	
Dislikes 0	

Response

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	

Comment
The NPCC RSC agrees with the simplified definition. There seems to be adequate language to request a CAP extension beyond the December 1, 2024, deadline if necessary. Attachment 1 clearly outlines the expectations.

Likes 0	
Dislikes 0	

Response

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	

Comment
Please consider saying “calendar days” versus simply “days” in Requirement R8 Part 8.1

Likes 0	

Dislikes 0	
Response	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	Yes
Document Name	
Comment	
1. RF would recommend adding that the CEA will timely review the Constraint declarations for validity and provide the GO notice of its determination. 2. As the CEA we would not be able to challenge early retirement based on financials (Refer to Attachment 1).	
Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	

Texas RE has some concerns regarding the proposed definition of Generator Cold Weather Constraint, consistency between Requirements R1 and R8, and to whom annual training shall be given in Requirement R5.

Definition

Texas RE is concerned that the definition of Generator Cold Weather Constraint proposed under the terms is inconsistent with the description of Generator Cold Weather Constraint in Attachment 1. The definition states that a Generator Cold Weather Constraint is "Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components." The description in Attachment 1, however, says "A Generator Cold Weather Constraint is any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the following criteria:" and lists out pre-approved Generator Cold Weather Constraints and case-by-case Generator Cold Weather Constraints. The proposed definition cannot be read without the additional information in Attachment 1, yet the proposed definition does not reference Attachment 1.

Texas RE proposes that either the proposed NERC Glossary definition include all of the information in Attachment 1, an explicit reference to Attachment 1, or eliminate the proposed NERC Glossary definition altogether and simply use the term as part of the requirements that is described in Attachment 1 and noted as such in the requirement language.

Consistency between Requirements R1 and R8

For verbiage consistency in Requirement R1, Texas RE recommends adding the word 'calendar' to Requirement 1.1.1 for developing new corrective actions after recalculation (in bold):

1.1.1 If the re-calculated Extreme Cold Weather Temperature (ECWT) is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation. If new corrective actions are needed to provide the required operational capability under Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) **calendar** months of the recalculation.

Although Requirement R8 requires shorter timeframe for timely review and evaluation of declared Generator Cold Weather Constraints, the calculation timeframe used in Requirement R1 for identifying Extreme Cold Weather Temperature to review and identify new corrective actions to provide the required operational capability remains five calendar years. Texas RE suggests revising Requirement R1 for Generator Owner to perform the ECWT calculations every 24 calendar months instead of every five calendar years, to be consistent with Requirement R8 and to ensure that most recent information is used to prepare unit's cold weather preparedness plan. Performing the ECWT calculations biennially could also help to include any 'Lessons Learned' from the latest weather event and reviewing/updating any operating limitations in the Generator Cold Weather Constraint declaration under Requirement R8. Texas RE recommends the following revision (in bold):

R1. At least once every **24 calendar months five calendar years**, each Generator Owner shall, for each of its applicable generating unit(s): [Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]

Requirement R5

Current language for Requirement R5 states that annual training shall be provided to maintenance or operations personnel responsible for implementing the cold weather preparedness plan(s). In many cases maintenance personnel implementing the plans and operational personnel responsible for implementing the plans in real-time could be different individuals. Therefore, it is important to provide training for both maintenance and operations personnel responsible for implementing the cold weather preparedness plan(s). Texas RE recommends the following revision (in bold):

R5. Each Generator Owner in conjunction with its Generator Operator shall identify the entity responsible for providing the generating unit-specific training, and that identified entity shall provide annual training to its maintenance **or and** operations personnel responsible for implementing the cold weather preparedness plan(s) developed pursuant to Requirement R4.

Likes 1	JEA, 1, McClung Joseph
Dislikes 0	

Response

Kimberly Turco - Constellation - 6

Answer	
Document Name	

Comment

Constellation supports NAGF Comments

Kimberly Turco on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Alan Wahlstrom - Southwest Power Pool, Inc. (RTO) - NA - Not Applicable - MRO,WECC

Answer	
Document Name	

Comment

SPP agrees with the comments of The ISO/RTO Council (IRC) Standards Review Committee (SRC)

Likes 0	
Dislikes 0	
Response	
Wayne Guttormson - SaskPower - 1	
Answer	
Document Name	
Comment	
Support BC Hydro's comments.	
Likes 0	
Dislikes 0	
Response	

2. In paragraph 68 of the June 2024 Order, FERC directed NERC to modify Requirement R7 of EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. FERC provided an example for how to address this directive, such as to require shorter timeframes for those units that have experienced issues and allow longer timeframes to address similar potential issues across a fleet for those units that have not experienced issues.

The drafting team modified Requirement R6 of EOP-012-2 to require a shorter deadline to implement corrective actions for those generating units that experience a Generator Cold Weather Reliability Event. Do you agree with the revised timelines? Please provide any additional comments to consider. If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team. Please review the posted draft ERO Enterprise document, EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process.

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	EOP-012-3 Constraint and CAP Process 10172024 - NAGF comments final.pdf

Comment

The NAGF notes that the timelines for the CAPs may create a significant burden since the GO cannot simply take outages to address these issues. It is unclear if these outages will take priority over other outages due to the very short timelines required for compliance or if other outages, many of which are probably more important for reliability all year long, will take priority. As an example of this concern, in PJM planned outages are not allowed from the 24th week to the 36th week of each calendar year. In 2024, this means that an outage cannot be scheduled from June 10th to September 9th. The NAGF's experience with project planning and execution shows that a CAP for Cold Weather Reliability Events is unlikely to be developed, equipment purchased and delivered and labor lined up to perform the installation between the date of the event, say mid-January and June 10th, particularly if widespread failures due to extreme winter weather create such demand for retrofit equipment and installation services that supply chains simply cannot keep up. This means the GO will have 11 weeks between September 9 and December 1 to schedule an outage to perform the needed tasks. (And determine within the first 17 days of these 11 weeks if an extension may be needed under the proposed 60-day filing requirement in the process document.) The fall season is often filled to the maximum with planned outage work, and the resources needed to add massive new tasks at the last minute do not exist. Has NERC or FERC or any Balancing Authorities performed any review to see how many additional outages can be scheduled in these 11 weeks? Or is it possible that NERC and FERC (and the RTO/ISO Council that submitted the comments FERC based their order on) are going to create an unreasonable expectation?

Regardless of this concern, the Process document has many areas that raise concerns to the NAGF. The NAGF has provided a copy of the process document with comments to help the SDT understand the concerns. Some areas of concern raised by the process document includes a deadline to submit a request for CAP extension that does not take into account issues beyond the GO's control, a statement that the GO must first work with the CEA before filing the request, which effectively moves the deadline back even further, the statement requiring "due diligence in ordering" without defining exactly what the CEA may consider due diligence,

Another issue of concern is the requirement to file a constraint declaration for the same recurring event types. As an example, if a wind farm has blade icing occur in the winter of 2025, it must create a CAP, make a declaration, file the declaration and then every other year review that declaration. If the same wind farm (or different wind farm owned by the same entity) has a blade icing event in 2026, the same CAP, declaration and review will be required again. In the course of 10 years, this owner is likely to have 10 declarations for the same thing, reviewing 5 of them each year. This is not a mere theoretical concern; ice storms are quite common in the southern US, and having to make new filings for each one would constitute mere regulatory churn. This process will not improve reliability and will take time away from entities' ability to actually provide more reliable service to the grid. This process should be revised to address the need to process duplicative reports by generators.

Finally, it is unclear how the timelines proposed in the process document posted with the standard may impact compliance. As an example, if a Generator Owner files for a CAP extension 30 days before the CAP deadline, does this cause a violation? Or does the request get immediately denied

without review because it does not meet the timeline specified in the document and therefore the Generator Owner will be deemed to have violated the standard when they cannot complete the CAP by the deadline?	
Likes 0	
Dislikes 0	
Response	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	
Comment	
OPG supports HQ comments: 'The Generator Cold Weather CAP Extension and Constraint Process document should be updated to reflect Canadian-specific language regarding applicable governmental authorities, for example, similar to the language used in the footnote 11." OPG supports Manitoba Hydro's comment recommending that for non-US Registered Entities: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner. OPG supports BC Hydro's comment (freezing precipitation in Québec can and has occurred in March and April months) regarding Requirement "R6: Similar to previously submitted comments, in Québec, Canada, Generator Cold Weather Reliability Events such as freezing precipitation, can and have happened well into the Spring calendar months (including April and May). The requirement to develop a CAP within 150-days of the Event is reasonable. However, the first day of July deadline will considerably reduce the CAP development timeline for late Spring Events. Worst case scenario, for a May Event, identification of common failure causes, solution identification and CAP development would need to be done in less than 45 days, which may result in an inadequate CAP. The addition of the December 1 deadline to implement a CAP (R6 Part 6.1.5) would ensure that adequate CAPs are developed and implemented before the next Winter season. With the addition of the December 1 deadline, HQ recommends deleting "the first day of July" language. "	
Likes 0	
Dislikes 0	
Response	
Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	
Comment	
Enel North America agrees with NAGF's comments on this question and that the revised timelines on CAPS could create a significant burden on GOs.	
Likes 0	

Dislikes 0	
Response	
Stephanie Kenny - Edison International - Southern California Edison Company - 6	
Answer	No
Document Name	
Comment	
See EEI comments	
Likes 0	
Dislikes 0	
Response	
Robert Blackney - Edison International - Southern California Edison Company - 1	
Answer	No
Document Name	
Comment	
See comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	
Comment	

If the expectation is that Generator Owners are to monitor for Generator Cold Weather Reliability Events throughout the year, rather than only during the winter season, then please consider the following revisions:

1. Strike “before the first day of July” from Requirement R6 and simply require that Corrective Action Plans be developed no more than 150 days after the Generator Cold Weather Reliability Event. This ensures that each event receives the same amount of time, regardless of when it occurs.

2. Consider revising Requirement R6.1.5 to read, “A timetable specifying that implementation of the Corrective Action Plan shall be completed prior to the first day of December of the next calendar year following the Generator Cold Weather Reliability Event; and”

These revisions would provide greater flexibility to the Generator Owner to schedule any needed maintenance outages in a manner that better supports reliability and keeps generators online.

Likes 0	
Dislikes 0	

Response

Colin Chilcoat - Invenergy LLC - 6

Answer	No
Document Name	

Comment

If the expectation is that Generator Owners are to monitor for Generator Cold Weather Reliability Events throughout the year, rather than only during the winter season, then please consider the following revisions:

1. Strike “before the first day of July” from Requirement R6 and simply require that Corrective Action Plans be developed no more than 150 days after the Generator Cold Weather Reliability Event. This ensures that each event receives the same amount of time, regardless of when it occurs.

2. Consider revising Requirement R6.1.5 to read, “A timetable specifying that implementation of the Corrective Action Plan shall be completed prior to the first day of December of the next calendar year following the Generator Cold Weather Reliability Event; and”

These revisions would provide greater flexibility to the Generator Owner to schedule any needed maintenance outages in a manner that better supports reliability and keeps generators online.

Likes 0	
Dislikes 0	

Response

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators

Answer	No
Document Name	

Comment

We at ACES greatly appreciate the monumental effort put forth by the drafting team in developing the proposed updates to EOP-012-2 in accordance with the FERC directives.

From the perspective of ACES, the proposed modifications to Requirement R6, while a good start, would benefit from further refinement. We believe that, as written, the timelines identified in Requirement R6 are too elastic and unduly discriminate against the GO based solely upon the date the generating unit(s) experienced a Generator Cold Weather Reliability event.

It is our opinion that the required compliance timeline would be best defined by removing the inherent obscurity associated with using specific calendar days. In short, we recommend using a timeline based solely on a defined quantity of calendar days and removing all references to explicit months and days. Please consider the following example scenarios as an illustration:

- Generating Unit 1 belonging to Entity A experiences a Generator Cold Weather reliability event on November 1st, 2024. Per the currently proposed version of Requirement R6, Entity A has until April 1st, 2025, to develop a CAP (150 days after).
- Generating Unit 2 belonging to Entity B experiences a Generator Cold Weather reliability event on March 17th, 2025. Per the currently proposed version of Requirement R6, Entity B has until June 30th, 2025, to develop a CAP (before the first day of July).
- In the above examples, Entity A is allowed 150 days after their event to develop a CAP whereas, Entity B is only allowed 90 days after the same event type to do the same.
    - This results in an unequal application of the Reliability Standard by granting Entity A an additional 60 calendar days to complete the same compliance activities as Entity B.
    - Assuming both entities develop a CAP within 100 calendar days of the event date:
        - Entity A would be compliant with Requirement R6.
        - Conversely, Entity B would be in violation of Requirement R6 and would potentially be subject to a compliance Penalty.

It is the viewpoint of ACES that entities should be provided with the **same** length of time to complete compliance activities required by a Reliability Standard. We recommend that the timeline be modified to 120 calendar days regardless of when the Generator Cold Weather Event occurs.

By examining NOAA Annual/Seasonal Climate Normals data, we were able to determine that almost all areas of the lower 48 US states experience the last spring freeze on or before May 28th (90% probability) and the first fall freeze on or after September 18th (90% probability). As there are 113 days between these two dates, we believe that a strict 120 calendar day metric is a reasonable alternative.

Additionally, it is our opinion that the timeline to address similar potential issues across a fleet for those units that have not experienced issues is too short. We are concerned that a GO with either a large generating fleet (large IOU) or limited resources (small electric cooperative), may not be able to complete all corrective actions on all applicable units within 24 calendar months. We believe that 36 calendar months is more appropriate to allow for variability between GOs across the industry.

Thus, we recommend modifying Requirement R6 as follows (note: for the sake of brevity, the requirement text for any sections without recommended changes has been omitted):

R6 Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop and implement a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed no more than 120 calendar days after the Generator Cold Weather Reliability Event. The Generator Owner shall:

6.1.5. A timetable specifying that implementation of the Corrective Action Plan shall be completed within 12 calendar months of the Generator Cold Weather Reliability Event; and

6.1.6. A review of applicability to similar equipment freeze protection measures at generating units owned by the Generator Owner, with a specified timetable for corrective actions to be completed within 36 calendar months of the Generator Cold Weather Reliability Event.

Likes 0	
Dislikes 0	

Response

Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	
See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Michael Bowman - City Utilities of Springfield, Missouri - 1	
Answer	No
Document Name	
Comment	
Recent changes to Southwest Power Pool (SPP) policy require all planned outages for the summer season to be submitted by February 15th. With the proposed shortened timeline to implement and complete a Corrective Action Plan and the associated freeze protection measures, a late season Generator Cold Weather Reliability Event could require scheduling an outage that has not been authorized by SPP to implement required corrective actions by the proposed December 1st deadline. This would negatively impact an entity's Performance Based Accreditation (PBA) SPRM recommends an exception or preapproved extension for instances when implementing corrective actions would require an outage not authorized by an entity's Balancing Authority.	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation does not agree. Shortening time frames does not alleviate the burden of lack of material, contracting resources or other schedulable items. Cost and timeframe are always intertwined. For example, government bid processes are often time consuming and shortening corrective action timeframe requirements could cause the entity to become non-compliant.	
Likes 0	

Dislikes 0	
Response	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	
Comment	
Vistra agrees with comments made by Duke Energy.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	
EEI does not object to the proposed shortened deadlines except for the language in Requirement R6, subpart 6.1.6. We understand 6.1.6 to mean that a GO is to complete freeze protection CAPs on similar equipment vulnerabilities within 24 months, however, we disagree that this is what the Commission directed in Paragraph 68 of the order. What they directed was that corrective actions needed to be taken on "similar equipment on all of its fleet within 24 months of becoming **aware of the freeze issue**." In other words, the clock should start after the GO has confirmed similar vulnerabilities on similar equipment on other generating resources. To address this issue, EEI suggests adding the following clarifying language to 6.1.6 as suggested below in boldface: **6.1.6.** A review of applicability **of** similar **freeze protection** equipment **installed on similar generating units within 12 calendar months of the of the Generator Cold Weather Reliability event** by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of **confirming a generating unit has similar equipment vulnerabilities**;	
Likes 0	
Dislikes 0	
Response	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	
Comment	

We do not object to the proposed shortened deadlines except for the language in Requirement R6, subpart 6.1.6. We understand 6.1.6 to mean that a GO is to complete freeze protection CAPs on similar equipment vulnerabilities within 24 months, however, we disagree that this is what the Commission directed in Paragraph 68 of the order. What they directed was that corrective actions needed to be taken on "similar equipment on all of its fleet within 24 months of becoming **aware of the freeze issue**." In other words, the clock should start after the GO has confirmed similar vulnerabilities on similar equipment on other generating resources. To address this issue, we suggest adding the following clarifying language to 6.1.6 as suggested below in boldface:

6.1.6. A review of applicability **to of** similar **freeze protection** equipment **installed on similar generating units within 12 calendar months of the of the Generator Cold Weather Reliability event** by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of **confirming a generating unit has similar equipment vulnerabilities**;

Likes 0	
Dislikes 0	

Response

Jeffrey Streifling - NB Power Corporation - 1

Answer	No
Document Name	

Comment

The Generator Cold Weather CAP Extension and Constraint Process document should be updated to reflect Canadian-specific language regarding applicable governmental authorities, for example, similar to the language used in the footnote 11.

Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner.

NB Power supports BC Hydro's comment (freezing precipitation in Québec can and has occurred in March and April months) regarding Requirement "R6: Similar to previously submitted comments, in Québec, Canada, Generator Cold Weather Reliability Events such as freezing precipitation, can and have happened well into the Spring calendar months (including April and May). The requirement to develop a CAP within 150-days of the Event is reasonable. However, the first day of July deadline will considerably reduce the CAP development timeline for late Spring Events. Worst case scenario, for a May Event, identification of common failure causes, solution identification and CAP development would need to be done in less than 45 days, which may result in an inadequate CAP. The addition of the December 1 deadline to implement a CAP (R6 Part 6.1.5) would ensure that adequate CAPs are developed and implemented before the next Winter season. With the addition of the December 1 deadline, HQ recommends deleting "the first day of July" language. "

Likes 0	
Dislikes 0	

Response

Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	No
Document Name	
Comment	
Ameren agrees with NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	
Avista does not object to the proposed shortened deadlines except for the language in Requirement R6, subpart 6.1.6. We understand 6.1.6 to mean that a GO is to complete freeze protection CAPs on similar equipment vulnerabilities within 24 months, however, we disagree that this is what the Commission directed in Paragraph 68 of the order. What they directed was that corrective actions needed to be taken on "similar equipment on all of its fleet within 24 months of becoming **aware of the freeze issue**." In other words, the clock should start after the GO has confirmed similar vulnerabilities on similar equipment on other generating resources. To address this issue, EEI suggests adding the following clarifying language to 6.1.6 as suggested below in boldface: **6.1.6.** A review of applicability **to of** similar **freeze protection** equipment **installed on similar generating units within 12 calendar months of the of the Generator Cold Weather Reliability event** by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of **confirming a generating unit has similar equipment vulnerabilities**;	
Likes 0	
Dislikes 0	
Response	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
AES US Renewables are in agreement that any corrective actions needed to mitigate root cause(s) resulting from a Generator Cold Weather Reliability Event should be completed as expeditiously as possible. However, we have real concerns about the ability to complete the CAP by December 1 if the	

Generator Cold Weather Reliability Event (GCWRE) occurred in the same year. For example, winter storms in the northeast can still occur as late as in March. With that in mind, it will be difficult to develop a CAP, implement the CAP and complete the CAP within 7-8 months if a generating facility located in northeast is impacted by the GCWRE. This time constraint will be reduced even further if there is extension request involved since it requires submittal of the extension at least 60 days in advance of the due date (December 1).

Additionally, we have concerns that corrective actions need to be completed within 24 months of the GCWRE at other sites owned by the Generator Owner for same equipment or freeze protection measures implicated in the root cause analysis for a site that experienced a GCWRE. This proposal may work for GOs that don't own a lot of sites. However, for IPPs that have generating assets in multiple regions, 24 months is not a realistic timeframe to complete the corrective actions. It will require time to send out RFPs to multiple contractors and then for internal review of the contractor proposals as well as negotiations involved. This could take up several months in best case scenario. And depending on the work that needs to be done, it will

require coordination with site-level personnel and outage coordination with other entities (eg: BAs, TOPs). So, we strongly suggest modifying the 24 calendar months to at least 36 calendar months.

Current proposed R6 requirement language does not specify when the extension requests need to be made. However, a companion document (*EOP-012-3 Constraint and CAP Process 10172024.pdf*) indicated that "*Entities are encouraged to submit the extension request as soon as they are aware they will not meet the CAP completion date but no later than **60 days** before the original required completion date.*" We would like to understand if the 60 days timeline is enforceable if it is not used within the R6 language. Furthermore, R6 language does not state what happens when the extension request is denied. Only the companion document specifies that *(If an extension request is denied, the selected actions in the Corrective Action Plan need to be completed in accordance with the original timetables.*). Again, we would like to understand if the language in the companion document is enforceable.

It is stated in the companion document that if the extension request is denied, the CAP will need to be completed in accordance to its original timetable. This will not be feasible if the CAP extension request is submitted close to the December 1 deadline. The CEA is allowed minimum of 60 days for the whole extension approval process (15 days to acknowledge receipt and verify all information has been provided + 45 days of review before providing notification to registered entity on whether their request is approved or denied). There is potentially the need for the CEA to extend beyond the 45 days to perform their review. That will further reduce the length of time for the GO to complete the CAP based on original timeline if the CAP extension is denied. So, for a registered entity to implement the CAP prior to December 1, the time for CEA to review will eat into the time that registered entities have to investigate the GCWRE, develop CAP and implement CAP. Using the example for a GCWRE that occurs in March, this extension review process can reduce the time registered entity has from 7-8 months down to 5-6 months (which can be further reduced if certain ISO/RTO regions do not allow planned outages during certain times of the year like peak summer time). We request the drafting team to look into all possible scenarios to ensure that reasonable amount of time is allocated for developing CAP, implementing CAP and requesting CAP extension (if applicable). Currently, the timeline listed in R6 is not reasonable.

Likes 0	
Dislikes 0	

Response

Martin Sidor - NRG - NRG Energy, Inc. - 6

Answer	No
Document Name	

Comment

Under the proposed 6.1.5, there may be cases where remedies to correct results from an Extreme Cold Weather Reliability event may not be feasible to be completed by December due to vendor or supply chain issues. There should be some flexibility to allow for mitigation activities with longer lead times for complete resolution without going through a formal corrective action plan extension.

The additional approval process needed for an extension is very inefficient and builds in potential delays that, if an extension is not approved, can set back the timing of a plan, creating a potential violation itself. Approval decisions would need to be mandated to be made in a short timeframe if they are still included in the standard.

Finally, within the section, footnote 10 speaks to freeze events occurring outside a winter period, such as October and November. Please clarify what is the designated winter period as it relates to this standard.

Likes 0	
Dislikes 0	

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5

Answer	No
Document Name	

Comment

Under the proposed 6.1.5, there may be cases where remedies to correct results from an Extreme Cold Weather Reliability event may not be feasible to be completed by December due to vendor or supply chain issues. There should be some flexibility to allow for mitigation activities with longer lead times for complete resolution without going through a formal corrective action plan extension. In addition, the additional approval process needed for an extension is very inefficient and builds in potential delays that, if an extension is not approved, can set back the timing of a plan. Approval decisions would need to have a short mandate timeframe if they are still included in the standard. Finally, within the section, footnote 10 speaks to freeze events occurring outside a winter period, such as October and November. Please clarify what is the designated winter period as it relates to this standard.

Likes 0	
Dislikes 0	

Response

Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle

Answer	No
Document Name	

Comment

PG&E supports both the NAGF and EEI concerns regarding outage scheduling and timeframe to address CAPs, as well as the process document concerns.

Likes 0	

Dislikes 0	

Response

Chantal Mazza - Chantal Mazza On Behalf of: Junji Yamaguchi, Hydro-Quebec (HQ), 1, 5; Nicolas Turcotte, Hydro-Quebec (HQ), 1, 5; - Chantal Mazza	
Answer	No
Document Name	
Comment	

The Generator Cold Weather CAP Extension and Constraint Process document should be updated to reflect Canadian-specific language regarding applicable governmental authorities, for example, similar to the language used in the footnote 11."

HQ supports Manitoba Hydro's comment recommending that for non-US Registered Entities: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner.

HQ supports BC Hydro's comment (freezing precipitation in Québec can and has occurred in March and April months) regarding Requirement "R6: Similar to previously submitted comments, in Québec, Canada, Generator Cold Weather Reliability Events such as freezing precipitation, can and have happened well into the Spring calendar months (including April and May). The requirement to develop a CAP within 150-days of the Event is reasonable. However, the first day of July deadline will considerably reduce the CAP development timeline for late Spring Events. Worst case scenario, for a May Event, identification of common failure causes, solution identification and CAP development would need to be done in less than 45 days, which may result in an inadequate CAP. The addition of the December 1 deadline to implement a CAP (R6 Part 6.1.5) would ensure that adequate CAPs are developed and implemented before the next Winter season. With the addition of the December 1 deadline, HQ recommends deleting "the first day of July" language. "

Likes 0	
Dislikes 0	

Response

Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	
Comment	

Dominion Energy supports EEI comments and further stipulates that the SDT has gone beyond the language and intent of the FERC Order. For larger generation entities with a diverse fleet, time for reviewing the specs for its fleet and identifiying potential cold weather issues should not be included in the 24 calendar month timeframe. Once the issue has been identified in a specific unit the clock should begin.

Likes 0	
Dislikes 0	

Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	No
Document Name	
Comment	
The 3 types of items required to complete a Corrective Action Plan (CAP) under R1, R2 and R3 are the same 3 types of items required to complete a Corrective Action Plan under R6, qualified personnel, proper materials, and the required plant conditions. Any repair or modification that can reasonably be completed before December 1st in fact should be completed, however any repair or modification that needs an outage or if qualified materials and people are not available CAP completion may have to wait until the next planned outage. Planned outages are scheduled to maintain reliability. Adding unplanned outages either postpones scheduled outages or forces outages into periods of time when demand is high therefore reducing the reliability to satisfy load requirements. The expertise for making decisions regarding the timing repairs is best left with the GOs, GOPs, and BAs. Any event after February 2nd will be due by July 1st. If the CEA takes 60 days to make a decision on an extension it is now August 30th. If that decision is NO, there are only 93 days until December 1st. Forcing completion of a CAP needing an extension will require either unqualified personnel, improper materials, or and Unplanned Outage. All of which impact BES reliability. Instead of requiring CEA approval, require the entity to keep evidence justifying the decision to make the repair later than December 1st. This is appropriate for audit during a subsequent audit.	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	No

Document Name	
Comment	
TEPC agrees with EEI's comments for section 6.1.6: *corrective actions needed to be taken on "similar equipment on all of its fleet within 24 months of becoming* ***aware of the freeze issue****." In other words, the clock should start after the GO has confirmed similar vulnerabilities on similar equipment on other generating resources.*	
Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	No
Document Name	
Comment	
AZPS agrees with comments submitted by EEI on behalf of its members to add a 12-calendar month assessment period in the timeline criteria prior to having 24 calendar months to implement corrective actions to similar equipment.	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation supports the comments submitted by NAGF and EEI.	
Likes 0	
Dislikes 0	
Response	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	No

Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and the North American Generator Forum (NAGF) on question 2	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
Duke Energy does not support the language used in requirement R6.1.5 which requires the resolution of all winter event corrective actions by December 1st of the following year. This interval is too restrictive to allow for evaluation and correction on many freeze protection repairs or for the installation of new freeze protection measures. The inadequacies of this time interval are compounded when the effects of a major winter storm are considered. Large storms, like Elliott or a Polar Vortex, impact multiple units across multiple utilities. It would be difficult for a GO to address multiple events in this timeframe with available vendor support, and competing against other utilities for these vendors will only make this situation worse. Maintaining R6.1.5 as proposed will also result in higher levels of extension approvals for CEAs to process. Duke Energy recommends the requirement be modified to a period of 24 calendar months.	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Manitoba Hydro recommends that for non-US Registered Entities: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner.	

Manitoba Hydro supports Hydro Quebec's comment: "The Generator Cold Weather CAP Extension and Constraint Process document should be updated to reflect Canadian-specific language regarding applicable governmental authorities, for example, similar to the language used in the footnote 11."

Manitoba Hydro supports BC Hydro's comment (freezing precipitation in Manitoba can and has occurred in March and April months): "Requirement R6: Similar to previously submitted comments, in British Columbia, Canada, Generator Cold Weather Reliability Events such as freezing precipitation, can and have happened well into the Spring calendar months (including April and May). The requirement to develop a CAP within 150-days of the Event is reasonable. However, the first day of July deadline will considerably reduce the CAP development timeline for late Spring Events. Worst case scenario, for a May Event, identification of common failure causes, solution identification and CAP development would need to be done in less than 45 days, which may result in an inadequate CAP. The addition of the December 1 deadline to implement a CAP (R6 Part 6.1.5) would ensure that adequate CAPs are developed and implemented before the next Winter season. With the addition of the December 1 deadline, BC Hydro recommends deleting "the first day of July" language. "

Likes 0	
Dislikes 0	

Response

Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer	No
Document Name	

Comment

Taking unplanned maintenance outages to meet a CAP deadline or pivot from a rejected CAP extension could be overburdensome to the GO. Clarity around timeliness expectations and exceptions could help alleviate pressure. Additionally, maintenance outages are typically planned during off-peak times. This limits availability to schedule last minute changes prior to the winter period.

Likes 0	
Dislikes 0	

Response

Joshua London - Eversource Energy - 1, Group Name Eversource

Answer	No
Document Name	

Comment

Eversource supports the comments of EEI.

Likes 0	
Dislikes 0	

Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	No
Document Name	
Comment	

1. Requirement R6: Similar to previously submitted comments, in British Columbia, Canada, Generator Cold Weather Reliability Events (Events) such as freezing precipitation, can and have happened well into the Spring calendar months (including April and May). The requirement to develop a Corrective Action Plan (CAP) within 150 days of the Event is reasonable. However, the July 1 deadline will considerably reduce the CAP development timeline for late Spring Events. Worst case scenario, for a May Event, identification of common failure causes, solution identification and CAP development would need to be done in less than 45 days, which may result in an inadequate CAP. The addition of the December 1 deadline to implement a CAP (R6 Part 6.1.5) would ensure that adequate CAPs are developed and implemented before the next Winter season. With the addition of the December 1 deadline, BC Hydro recommends deleting "the first day of July" language.
2. Requirement R6 Part 6.1.6 requires corrective actions be implemented to similar equipment freeze protection measures (FPMs) within 24 calendar months of a GCWRE. BC Hydro interprets "similar equipment freeze protection measures" as existing FPMs, and therefore the Part 6.1.6 timeline of 24 calendar months only applies to existing FPMs. Any identified need for new FPMs will follow a similar timeline to R7.1.2 which is up to 48 calendar months. Given the BC Hydro fleet size and possible differing design solutions for the same cause at different locations throughout the fleet, a longer implementation timeline (36 calendar months to 48 calendar months) may be required for new FPMs. BC Hydro requests that the DT confirm this understanding or clarify the timeline expectation for new FPMs implementation.
3. BC Hydro recommends that R6 Part 6.2.1 be revised to replace "how" with "why" for which better explains the rationale for circumstances beyond an entity's control.
4. Requirement R6 Part 6.1. "Ensure the Corrective Action Plan contains at a minimum:". BC Hydro notes that this wording does not align with other Standard Requirements that list what must be in a Procedure, Plan, etc. BC Hydro recommends revising the wording in R6 as appropriate so Part 6.1 would be: "6.1 The Corrective Action Plan shall include:"

Likes 0	
Dislikes 0	

Response	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	Yes
Document Name	
Comment	

PNM agrees with the comments of EEI:

EEI does not object to the proposed shortened deadlines except for the language in Requirement R6, subpart 6.1.6. We understand 6.1.6 to mean that a GO is to complete freeze protection CAPs on similar equipment vulnerabilities within 24 months, however, we disagree that this is what the Commission directed in Paragraph 68 of the order. What they directed was that corrective actions needed to be taken on "similar equipment on all of its fleet within 24 months of becoming ***aware of the freeze issue****." In other words, the clock should start after the GO has confirmed similar vulnerabilities on similar equipment on other generating resources. To address this issue, EEI suggests adding the following clarifying language to 6.1.6 as suggested below in boldface:*

6.1.6. *A review of applicability* ***to of*** *similar* ***freeze protection*** *equipment* ***installed on similar generating units within 12 calendar months of the of the Generator Cold Weather Reliability event freeze protection measures at generating units owned*** *by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of* ***the Generator Cold Weather Reliability Event confirming a generating unit has similar equipment vulnerabilities****;*

Likes 0	
Dislikes 0	

Response

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5

Answer	Yes
Document Name	

Comment

NV Energy does not object to the proposed shortened deadline to implement corrective actions for generating units experiencing a Generator Cold Weather Reliability Event.

Likes 0	
Dislikes 0	

Response

Hillary Creurer - Allete - Minnesota Power, Inc. - 1

Answer	Yes
Document Name	

Comment

MP feels that 24 months may be a short timeline in some cases but believes that the extension process should address any extenuating circumstances.

Likes 0	
Dislikes 0	

Response

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC

Answer	Yes
Document Name	

Comment
Section 6.2 adequately addresses this situation, and Section 7.3 provides clarity on what needs to be submitted. From a Generator Owner (GO) perspective, here is some background on the likely reasoning for CAP extension requests and what the GO should be briefed on regarding expected deliverables: If an engineering study or similar activity is required to assess the balance of freeze protection measures, the GO may need to request a CAP extension. This is because such activities can take considerable time, depending on non-recurring O&M budgeting and implementation policies. The GO should be prepared to file a CAP extension request with a plan and timeline as soon as practicable, based on the known implementation timeline for assessing similar freeze protection measures.

Likes 0	
Dislikes 0	

Response

Carver Powers - Utility Services, Inc. - 4

Answer	Yes
Document Name	

Comment
NERC needs to provide more clarity about where the CAP Extension and Constraint Process documents will be posted on NERC's website to make them easy to access. Also, if these processes are to be done through NERC's ERO Portal, and Registered Entities must file these through a Regional Entity, a contact for each Region should be established and published so Registered Entities will have a contact to address any process or access issues with the ERO Portal.

Likes 0	
Dislikes 0	

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter

Answer	Yes
Document Name	

Comment
FirstEnergy has no concerns.

Likes 0	
Dislikes 0	

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Texas RE agrees with the timeline proposed in Requirement R6. For clarity, Texas RE recommends the following revision to Requirement Part 6.1.2 (in bold): 6.1.2. A list of actions to add new **freeze protection measures** or remedy issues with existing freeze protection measures;"	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
While AEP agrees with the overall substance of R6, we recommend that it be revised to indicate what it means to properly "implement" a Corrective Action Plan. Does it perhaps mean to complete what is later specified and required in R6.1, or something else entirely? If so, the phrase "complete the obligations of R6.1" may be preferable to "implement the Corrective Action Plan." AEP requests this clarity be provided in the obligation.	
Likes 0	
Dislikes 0	
Response	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	
Document Name	
Comment	

R6 states, “develop and implement” a Corrective Action Plan…”, with “and implement” being added in this version. For the situation where a CAP is not being developed but a Generator Cold Weather Constraint is being submitted, the “and implement” does not seem to fit this scenario.

Also, Southern believes the intent for R6 is to require 6.1 and 6.2, **or** 6.3 and not to require all items in R6.1. For example, a timetable as mentioned in R6.1.5. If a Generator Cold Weather Constraint is declared, then a timetable obviously should not be required.

In addition, then requirement in R6.1.5 could be a very aggressive goal especially if outages, manpower, or material limitations arise. Assuming these types of problems are deemed valid, then an extension would have to be approved.

In addition, Southern agrees with the comments from NAGF related to the short timelines and potential difficulty scheduling outages for CAPS that involve taking a unit off for the necessary work. Southern does not agree that a Compliance Enforcement Authority's (CEA) approval of a CAP is consistent with a risk-based action that improves reliability. The insertion of the CEA into a registered entity's process of mitigating a reliability concern adds unneeded and burdensome administrative layers. The NERC standard should solely focus on identifying the problem and implementation of mitigating actions, both of which are in the registered entity's purview. The provision of an entity's mitigation plan to the CEA should be required, but only for compliance enforcement purposes. Actions that allow the CEA to go beyond an audit of the implementation plan are out of scope of the standard.	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	

3. In paragraph 70 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC.

The drafting team provided language changes in Requirements R6 and R7 for a Corrective Action Plan extension process. Do you believe that the proposed language changes meet the intent of paragraph 70 of the FERC Order? Please provide any additional comments to consider. If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	

MRO NSRF recommends that dates for which a registered entity is to be held to must be in the Requirement.

MRO NSRF recommends there be an “approval by default” if the CEA does not respond within a given period, for example 30 days after submittal to CEA.

MRO NSRF recommends that the existing 60-day corrective action plan extension request have caveats for scenarios when it is not determined until within in the 60 day period that an extension is required. There are various obvious scenarios where this is a real and realized risk, with causes outside of the control of the entity, and must be addressed.

Likes 0	
Dislikes 0	
Response	

Joshua London - Eversource Energy - 1, Group Name Eversource	
Answer	No
Document Name	
Comment	

Eversource supports the comments of EEI.

Likes 0	
Dislikes 0	
Response	

Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	No

Document Name	
Comment	
Timeliness expectations would be a significant burden on the GO and could cause unplanned outages.	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
EOP-012-3 R6.2 notes footnote 11: *"Extension requests will be received and evaluated in accordance with the NERC process. The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction."* Manitoba Hydro interprets footnote 11 & 12 to exclude Canadian entities from having to request CAP extensions. Is this interpretation correct? Please advise. Manitoba Hydro recommends that for non-US Registered Entities, this additional language/guidance be added to footnote 11 and 12: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner.	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
Duke Energy does do not agree with the pre-approval process for corrective action extension. Criteria for extensions should be captured in the standard and acceptance of the extension should be evaluated as part of the audit process. Like our response for question 1, Duke Energy believes it is inappropriate for the CEA to have roles on both the enforcement and performance sides of the standard implementation. Additionally, we support the NAGF's comments on a lack of an appeals process for corrective action plan denial.	

Likes 0	
Dislikes 0	

Response

Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples

Answer	No
Document Name	

Comment

Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI), the Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF), and the North American Generator Forum (NAGF) on question 3

Likes 0	
Dislikes 0	

Response

Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments

Answer	No
Document Name	

Comment

Black Hills Corporation supports the comments submitted by NAGF and EEI.

Likes 0	
Dislikes 0	

Response

Andrew Smith - APS - Arizona Public Service Co. - 5

Answer	No
Document Name	

Comment

AZPS agrees with comments submitted by EEI on behalf of its members that consideration should be given to add an appeals process for a denial of a Corrective Action Plan extension request.

Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	No
Document Name	
Comment	
TEPC agrees with EEI's comments: *there needs to be more detail defining the timelines associated with the CEA reviews and determinations*. As for Footnotes 11 and 12: These are for non US-Registered entities and should be removed.	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	
Comment	
Dominion Energy supports the EEI comments. In addition, Dominion Energy has a concern that the appeal process is not formally outlined or appear even exist for denial of constraints by NERC staff. Also, the entire constraint review process should be formalized in a public document in either the	

standard itself or in the Rules of Procedure. While the draft internal NERC procedure is a good start, a formal documented and public process should be created and maintained.	
Likes 0	
Dislikes 0	
Response	
Chantal Mazza - Chantal Mazza On Behalf of: Junji Yamaguchi, Hydro-Quebec (HQ), 1, 5; Nicolas Turcotte, Hydro-Quebec (HQ), 1, 5; - Chantal Mazza	
Answer	No
Document Name	
Comment	
Does the R6.2 footnote 11 exclude Canadian entities from having to request CAP extensions. Is this interpretation correct? Please advise. R6 and R7 requirements regarding pre-approval of CAPs by NERC use language that is similar to the TPL-007 standard. TPL-007 has a Canadian Variance where implementation of Corrective Action Plan(s) that require capital investment must be approved by the applicable provincial regulatory authority. This project should consider whether Canadian-specific language is needed in Requirements R6, R7 and R8 to align with the regulatory practices/processes in Canada for approving Corrective Action Plan(s) requiring capital investments. HQ supports Manitoba Hydro's comment "Manitoba Hydro recommends that for non-US Registered Entities, this additional language/guidance be added to footnote 11 and 12: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner.	
Likes 0	
Dislikes 0	
Response	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	No
Document Name	
Comment	
PG&E supports NAGF and EEI concerns regarding the timeline for CAPs (referenced above), as well as their suggested revisions to R7 language.	
Likes 0	
Dislikes 0	
Response	

Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	No
Document Name	
Comment	
This approach does not take into account potential for excess outages. In addition, as explained in Response to Q2, the additional approval process needed for an extension is very inefficient and builds in potential delays that, if an extension is not approved, can set back the timing of a plan. NRG recommends that approval decisions would need to have a short mandate timeframe if they are still included in the standard.	
Likes 0	
Dislikes 0	
Response	

Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	No
Document Name	
Comment	
This approach does not take into account potential for excess outages. In addition, as explained in Response to Q2, the additional approval process needed for an extension is very inefficient and builds in potential delays that, if an extension is not approved, can set back the timing of a plan. NRG recommends that approval decisions would need to be mandated to be made within a short timeframe if they are still included in the standard.	
Likes 0	
Dislikes 0	
Response	

Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	No
Document Name	
Comment	
Tri-State supports MRO NSRF Comment.	
Likes 0	
Dislikes 0	
Response	

Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	

Similar to the comment on proposed R6, current proposed R7.3 requirement language does not specify when the extension requests need to be made. However, a companion document (*EOP-012-3 Constraint and CAP Process 10172024.pdf*) indicated that "*Entities are encouraged to submit the extension request as soon as they are aware they will not meet the CAP completion date but no later than **60 days** before the original required completion date.*" We would like to understand if the 60 days timeline is enforceable if it is not used within the R7 language. Furthermore, R7 language does not state what happens when the extension request is denied. Only the companion document specifies that *(If an extension request is denied, the selected actions in the Corrective Action Plan need to be completed in accordance with the original timetables.*). Again, we would like to understand if the language in the companion document is enforceable.

Additionally, the reference to R2 in R7's language needs to be more specific. R2 is split into two parts – R2.1 and R2.2. Only R2.1 is allowed to have CAP. Recommend modifying the R7 language as following:

*Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, **R2 Part 2.1**, or R3 shall, as applicable:*

Likes 0	
Dislikes 0	
Response	

Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	

Although the changes made to Requirements R6 and R7 comply with the intent of the FERC Order, there needs to be more detail defining the timelines associated with the CEA reviews and determinations. We further ask that consideration be given to including an appeals process for a denial of a Corrective Action Plan extension. While we understand that NERC is not bound to Requirements contained in Reliability Standards, determinations that represent the denial of a CAP extension may be caused by a misunderstanding or missing information that can be resolved through an appeals process.

EEI additionally questions the value of Footnotes 11 and 12, which state that extension requests will be evaluated in accordance with NERC processes and extension requests for non US-Registered entities should be implemented in a manner consistent with the responsible government authority. Given NERC or applicable governmental authorities or agencies in non-US jurisdiction are not subject to Requirements within NERC Reliability Standards, these footnotes have no utility and should be removed.

Likes 0	
Dislikes 0	

Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
As stated above, the timelines for the CAPs may create a significant burden since the GO cannot simply take outages to address these issues or may face other barriers. It would be highly counterproductive regarding reliability assurance for NERC to insist that these outages must take priority over other outage work that has long been planned and is critically needed. This issue needs clarification to ensure the standard is clear and unambiguous. The NAGF also recommends that the R7 language be modified to only refer to R2, Part 2.1 since CAP is not allowed under 2.2.	
Likes 0	
Dislikes 0	
Response	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	No
Document Name	
Comment	
Ameren agrees with NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	No
Document Name	
Comment	
Does the R6.2 footnote 11 exclude Canadian entities from having to request CAP extensions. Is this interpretation correct? Please advise. R6 and R7 requirements regarding pre-approval of CAPs by NERC use language that is similar to the TPL-007 standard. TPL-007 has a Canadian Variance where implementation of Corrective Action Plan(s) that require capital investment must be approved by the applicable provincial regulatory	

authority. This project should consider whether Canadian-specific language is needed in Requirements R6, R7 and R8 to align with the regulatory practices/processes in Canada for approving Corrective Action Plan(s) requiring capital investments.

NB Power supports Manitoba Hydro's comment "Manitoba Hydro recommends that for non-US Registered Entities, this additional language/guidance be added to footnote 11 and 12: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner.

Likes 0	
Dislikes 0	

Response

Mike Magruder - Avista - Avista Corporation - 1

Answer	No
Document Name	

Comment

Although the changes made to Requirements R6 and R7 comply with the intent of the FERC Order, there needs to be more detail defining the timelines associated with the CEA reviews and determinations. We further ask that consideration be given to including an appeals process for a denial of a Corrective Action Plan extension. While we understand that NERC is not bound to Requirements contained in Reliability Standards, determinations that represent the denial of a CAP extension may be caused by a misunderstanding or missing information that can be resolved through an appeals process.

We additionally question the value of Footnotes 11 and 12, which state that extension requests will be evaluated in accordance with NERC processes and extension requests for non US-Registered entities should be implemented in a manner consistent with the responsible government authority. Given NERC or applicable governmental authorities or agencies in non-US jurisdiction are not subject to Requirements within NERC Reliability Standards, these footnotes have no utility and should be removed.

Likes 0	
Dislikes 0	

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer	No
Document Name	

Comment

Although the changes made to Requirements R6 and R7 comply with the intent of the FERC Order, there needs to be more detail defining the timelines associated with the CEA reviews and determinations. We further ask that consideration be given to including an appeals process for a denial of a Corrective Action Plan extension. While we understand that NERC is not bound to Requirements contained in Reliability Standards, determinations that

represent the denial of a CAP extension may be caused by a misunderstanding or missing information that can be resolved through an appeals process.

EEI additionally questions the value of Footnotes 11 and 12, which state that extension requests will be evaluated in accordance with NERC processes and extension requests for non US-Registered entities should be implemented in a manner consistent with the responsible government authority. Given NERC or applicable governmental authorities or agencies in non-US jurisdiction are not subject to Requirements within NERC Reliability Standards, these footnotes have no utility and should be removed.

Likes 0	
Dislikes 0	

Response

David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers

Answer	No
Document Name	

Comment

Vistra agrees with comments made by Duke Energy.

Likes 0	
Dislikes 0	

Response

Richard Jackson - U.S. Bureau of Reclamation - 1

Answer	No
Document Name	

Comment

Recommend that any corrective action plan approval and extension that is requested be handled by a single senior management official with overall authority and responsibility for leading and managing implementation of and continuing adherence to the requirements within the NERC EOP-012 cold weather standards and not at the Compliance Enforcement Authority (CEA). The CEA will then be able to audit the process as required.

Likes 0	
Dislikes 0	

Response

Hillary Creurer - Allete - Minnesota Power, Inc. - 1

Answer	No

Document Name	
Comment	
MP agrees with EEI that defining timelines associated with CEA reviews and determination and an appeals process to support denials is needed.	
Likes 0	
Dislikes 0	
Response	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	No
Document Name	
Comment	
RF would recommend adding that the CEA will timely review the corrective action plan extensions for validity and provide the GO notice of its determination.	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	
Comment	
Although the changes made to Requirements R6 and R7 comply with the intent of the FERC Order, there needs to be more detail defining the timelines associated with the CEA reviews and determinations. We further ask that consideration be given to including an appeals process for a denial of a Corrective Action Plan extension. While we understand that NERC is not bound to Requirements contained in Reliability Standards, determinations that represent the denial of a CAP extension may be caused by a misunderstanding or missing information that can be resolved through an appeals process. NV Energy additionally questions the value of Footnotes 11 and 12, which state that extension requests will be evaluated in accordance with NERC processes and extension requests for non-US-Registered entities should be implemented in a manner consistent with the responsible government authority. Given NERC or applicable governmental authorities or agencies in non-US jurisdiction are not subject to Requirements within NERC Reliability Standards, these footnotes have no utility and should be removed.	

Additionally, NV Energy recommends that dates for which a registered entity is to be held to must be in the Requirement.

NV Energy also recommends there be an “approval by default” if the CEA does not respond within a given period, for example 30 days after submittal to CEA.

Lastly, NV Energy recommends that the existing 60-day corrective action plan extension request have caveats for scenarios when it is not determined until within in the 60-day period that an extension is required. There are various obvious scenarios where this is a real and realized risk, with causes outside of the control of the entity, and must be addressed.

Likes 0	
Dislikes 0	

Response

Selene Willis - Edison International - Southern California Edison Company - 5

Answer	No
Document Name	

Comment

See EEI Comments

Likes 0	
Dislikes 0	

Response

Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC

Answer	No
Document Name	

Comment

PNM agrees with the comments of Texas RE:

In Requirement Part 6.1.6, Texas RE recommends the SDT take a similar approach to PRC-004-6 Requirement R5 to ensure that applicable entities will conduct an evaluation of all similar equipment, document which equipment needs a CAP to be completed within 24 hours and which equipment does not need a CAP. Texas RE recommends the following revision:

6.1.6 An evaluation of applicability to similar equipment freeze protection measures at generating units owned by the Generator Owner:

Develop a Corrective Action Plan (CAP) for the identified similar equipment freeze protection measures to be completed within 24 calendar months of the Generator Cold Weather Reliability Event; or

Explain in a declaration why corrective actions are beyond the entity's control or would not improve BES reliability, and that no further corrective actions will be taken.

M6 Each Generator Owner will have documented evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event at an applicable unit in accordance with Requirement R6. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), Generator Cold Weather Constraint(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, and updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan. ***Each Generator owner shall have dated evidence that demonstrates it developed a CAP and an evaluation of the CAP's applicability to other equipment freeze protection measures, or a declaration in accordance with Requirement Part 6.1.6.***

Likes 0	
Dislikes 0	

Response

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company

Answer	No
Document Name	

Comment

It appears that R7.4 should be listed as "or", or state "Document in a declaration if applicable."

Southern further agrees with the EEI and NAGF comments concerning the timing and scheduling of outages to implement CAPS.

Likes 0	
Dislikes 0	

Response

Robert Blackney - Edison International - Southern California Edison Company - 1

Answer	No
Document Name	

Comment

See comments submitted by EEI.

Likes 0	
Dislikes 0	
Response	
Stephanie Kenny - Edison International - Southern California Edison Company - 6	
Answer	No
Document Name	
Comment	
See EEI comments	
Likes 0	
Dislikes 0	
Response	
Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	
Comment	
Enel North America agrees with the MRO NSRF's recommendation that the existing 60-day corrective action plan extension request should allow caveats for scenarios when it is not determined until within in the 60-day period that an extension is required. There are various obvious scenarios where this is a real and realized risk, with causes outside of the control of the entity, and must be addressed.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no concerns	
Likes 0	

Dislikes 0	

Response

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	

Comment
The revised language is clear and acceptable as written.

Likes 0	
Dislikes 0	

Response

Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	

Comment
The SRC generally agrees with the drafting team's proposed language, and recommends the following additional revisions. First, the SRC recommends that the deadline for developing a CAP in Requirement R6 be revised from "before the first day of July" to "before the first day of ***the following*** July" to help minimize potential ambiguity regarding the CAP development deadline. Second, the SRC recommends that Part 6.2 of Requirement R6 be revised to clarify that CEA review and approval is not needed in scenarios in which the actions in the CAP need to be updated, but the updates will not require extension of the timelines in Part 6.1. The SRC therefore recommends that the beginning of Part 6.2 be revised to read as follows: "If it determines that it may need to exceed a timeline in Part 6.1, update the Corrective Action Plan . . ." Third, the SRC recommends including a timeline for submitting extension requests (for example, 60 days before the first deadline that would be impacted by the extension request). This would help reduce last-minute extension requests and ensure the CEA has adequate time to review and process extension requests. Finally, the SRC recommends that the beginning of Part 6.2.1 be revised to read "an explanation of the circumstances . . ." to better fit the overall structure of the list of elements of Part 6.2.

Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Colin Chilcoat - Invenergy LLC - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rhonda Jones - Invenergy LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	

In Requirement Part 6.1.6, Texas RE recommends the SDT take a similar approach to PRC-004-6 Requirement R5 to ensure that applicable entities will conduct an evaluation of all similar equipment, document which equipment needs a CAP to be completed within 24 hours and which equipment does not need a CAP. Texas RE recommends the following revision:

6.1.6 An evaluation of applicability to similar equipment freeze protection measures at generating units owned by the Generator Owner:

- **Develop a Corrective Action Plan (CAP) for the identified similar equipment freeze protection measures to be completed within 24 calendar months of the Generator Cold Weather Reliability Event; or**
- **Explain in a declaration why corrective actions are beyond the entity's control or would not improve BES reliability, and that no further corrective actions will be taken.**

M6 Each Generator Owner will have documented evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event at an applicable unit in accordance with Requirement R6. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), Generator Cold Weather Constraint(s), completed work orders, copies of any

Corrective Action Plan extension requests and supporting documentation, and updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan. **Each Generator owner shall have dated evidence that demonstrates it developed a CAP and an evaluation of the CAP's applicability to other equipment freeze protection measures, or a declaration in accordance with Requirement Part 6.1.6.**	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Alan Wahlstrom - Southwest Power Pool, Inc. (RTO) - NA - Not Applicable - MRO,WECC	
Answer	
Document Name	
Comment	
SPP agrees with the comments of The ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Likes 0	
Dislikes 0	
Response	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	
Document Name	

Comment
OPG supports HQ comments: "The Generator Cold Weather CAP Extension and Constraint Process document should be updated to reflect Canadian-specific language regarding applicable governmental authorities, for example, similar to the language used in the footnote 11." OPG supports Manitoba Hydro's comment recommending that for non-US Registered Entities: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner. OPG supports BC Hydro's comment (freezing precipitation in Québec can and has occurred in March and April months) regarding Requirement "R6: Similar to previously submitted comments, in Québec, Canada, Generator Cold Weather Reliability Events such as freezing precipitation, can and have happened well into the Spring calendar months (including April and May). The requirement to develop a CAP within 150-days of the Event is reasonable. However, the first day of July deadline will considerably reduce the CAP development timeline for late Spring Events. Worst case scenario, for a May Event, identification of common failure causes, solution identification and CAP development would need to be done in less than 45 days, which may result in an inadequate CAP. The addition of the December 1 deadline to implement a CAP (R6 Part 6.1.5) would ensure that adequate CAPs are developed and implemented before the next Winter season. With the addition of the December 1 deadline, HQ recommends deleting "the first day of July" language. "

Likes 0	
Dislikes 0	

Response

4. In paragraph 72 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to clarify that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

The drafting team provided updated language in Requirement R2 Part 2.1 to address the issue of units in different stages of design and construction. February 16, 2023 was chosen as a date of demarcation as that was the date the Extreme Cold Weather Temperature was approved by FERC. Do you agree that revisions to Requirement R2 Part 2.1 address this directive? If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	
Comment	
Enel North America agrees with EEI's response to question 4 that the date used for Requirement R2, subparts 2.1 and 2.2 for new resources should be the approval date of this Standard.	
Likes 0	
Dislikes 0	
Response	

Stephanie Kenny - Edison International - Southern California Edison Company - 6	
Answer	No
Document Name	
Comment	
See EEI comments	
Likes 0	
Dislikes 0	
Response	

Robert Blackney - Edison International - Southern California Edison Company - 1	
Answer	No
Document Name	
Comment	

See comments submitted by EEI.

Likes 0	
Dislikes 0	

Response

Rhonda Jones - Invenergy LLC - 5

Answer	No
Document Name	

Comment

Invenergy disagrees that the revisions to Requirement 2 address the FERC directive. If the intent is for corrective action plans to be completed prior to the generating unit's commercial operation date and for the entity to have the capability to operate at the unit's ECWT for at least 12 hours, then it is unnecessary to divide this requirement into separate tracks based on the approval date of the ECWT definition. As such, we recommend returning to the language of EOP-012-2 and replacing the CAP language with constraint declaration language.

If two tracks are to be pursued, then we disagree that February 16, 2023, is the most reasonable date of demarcation to address the issue of units in different stages of design and construction and instead proposes October 1, 2024.

The effective date of EOP-012-2 presents as a more reasonable alternative by which industry would have received sufficient notice of the approval of the ECWT definition and had an opportunity to calculate that value for incorporation in the design criteria of new generating units.

Likes 0	
Dislikes 0	

Response

Colin Chilcoat - Invenergy LLC - 6

Answer	No
Document Name	

Comment

Invenergy disagrees that the revisions to Requirement 2 address the FERC directive. If the intent is for corrective action plans to be completed prior to the generating unit's commercial operation date and for the entity to have the capability to operate at the unit's ECWT for at least 12 hours, then it is unnecessary to divide this requirement into separate tracks based on the approval date of the ECWT definition. As such, we recommend returning to the language of EOP-012-2 and replacing the CAP language with constraint declaration language.

If two tracks are to be pursued, then we disagree that February 16, 2023, is the most reasonable date of demarcation to address the issue of units in different stages of design and construction and instead proposes October 1, 2024.

The effective date of EOP-012-2 presents as a more reasonable alternative by which industry would have received sufficient notice of the approval of the ECWT definition and had an opportunity to calculate that value for incorporation in the design criteria of new generating units.

Likes 0	
Dislikes 0	
Response	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	No
Document Name	
Comment	
PNM agrees with the comments of EEI: *While EEI appreciates the intent of the February 16, 2023, date, we do not agree that compliance date should be aligned to when a glossary term is approved. We also note that there are other changes within the proposed standard that could impact what an entity includes in the design of their resource beyond the definition of Extreme Cold Weather Temperature, including the proposed definition of Generator Cold Weather Constraint. For this reason, we ask that the date used for Requirement R2, subparts 2.1 and 2.2 for new resources should be the approval of this Standard. NERC Reliability Standards should be forward looking and should not be aligned to compliance measures or dates from previous versions of Reliability Standards or approval dates of Glossary Terms.*	
Likes 0	
Dislikes 0	
Response	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	
See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	
Comment	

While NV Energy appreciates the intent of the February 16, 2023, date, we do not agree that compliance date should be aligned to when a glossary term is approved. We also note that there are other changes within the proposed standard that could impact what an entity includes in the design of their resource beyond the definition of Extreme Cold Weather Temperature, including the proposed definition of Generator Cold Weather Constraint. For this reason, we ask that the date used for Requirement R2, subparts 2.1 and 2.2 for new resources should be the approval of this Standard. NERC Reliability Standards should be forward looking and should not be aligned to compliance measures or dates from previous versions of Reliability Standards or approval dates of Glossary Terms.

Likes 0	
Dislikes 0	

Response

Richard Jackson - U.S. Bureau of Reclamation - 1

Answer	No
Document Name	

Comment

Reclamation agrees that revisions to Requirement R2 Part 2.1 addresses the FERC directive for units under construction. However, Reclamation does not agree with including the 20 MPH as a criterion unless an analysis/justification for the 20 MPH windspeed that would affect equipment in a negative way can be provided.

Likes 0	
Dislikes 0	

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer	No
Document Name	

Comment

While EEI appreciates the intent of the February 16, 2023, date, we do not agree that compliance date should be aligned to when a glossary term is approved. We also note that there are other changes within the proposed standard that could impact what an entity includes in the design of their resource beyond the definition of Extreme Cold Weather Temperature, including the proposed definition of Generator Cold Weather Constraint. For this reason, we ask that the date used for Requirement R2, subparts 2.1 and 2.2 for new resources should be the approval of this Standard. NERC Reliability Standards should be forward looking and should not be aligned to compliance measures or dates from previous versions of Reliability Standards or approval dates of Glossary Terms.

Likes 0	
Dislikes 0	

Response

Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	
Comment	
While we appreciate the intent of the February 16, 2023, date, we do not agree that compliance date should be aligned to when a glossary term is approved. We also note that there are other changes within the proposed standard that could impact what an entity includes in the design of their resource beyond the definition of Extreme Cold Weather Temperature, including the proposed definition of Generator Cold Weather Constraint. For this reason, we ask that the date used for Requirement R2, subparts 2.1 and 2.2 for new resources should be the approval of this Standard. NERC Reliability Standards should be forward looking and should not be aligned to compliance measures or dates from previous versions of Reliability Standards or approval dates of Glossary Terms.	
Likes 0	
Dislikes 0	
Response	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	No
Document Name	
Comment	
There is no reason to split the language into two parts around February 16, 2023. Requirement R2 will only apply once the unit is in commercial operation, and a corrective action plan for freeze protection measures that is required to be completed prior to commercial operation is not really different from simply requiring the freeze protection measures to be in place as of the date of commercial operation. The language in R2 should be updated to provide 32 km/hr as an equivalent wind speed to 20 mph." NB Power supports BC Hydro's comments: "Under Requirement R2, BC Hydro recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada." The date of February 16, 2023, when the definition of Extreme Cold Weather Temperature was approved by FERC it is not equivalent with a compliance requirement, unless accompanied by an applicable effective standard. The recommendation is to use instead the effective date for the new EOP-012-3 to be enforceable for non-US entities, as applicability criteria for the Generator Owner first contractual commitment to design criteria.	
Likes 0	
Dislikes 0	
Response	

Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	No
Document Name	
Comment	
Ameren agrees with EEI's comments.	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
As drafted, it is unclear if a unit constructed after 2027 would be in violation of R2 if it experiences a Generator Cold Weather Reliability Event. As an example, if the new unit is built with the design specified to be to -10 deg F and a 20-mph wind where the ECWT is 0, is there a violation if a GCWRE occurs and the cause is determined to be an error in the calculation made by the construction engineer? Or is the fact that you have a document that says the design should meet the ECWT plus 20 mph wind sufficient for compliance with R2, regardless of performance?	
Likes 0	
Dislikes 0	
Response	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	
While Avista appreciates the intent of the February 16, 2023, date, we do not agree that compliance date should be aligned to when a glossary term is approved. We also note that there are other changes within the proposed standard that could impact what an entity includes in the design of their resource beyond the definition of Extreme Cold Weather Temperature, including the proposed definition of Generator Cold Weather Constraint. For this reason, we ask that the date used for Requirement R2, subparts 2.1 and 2.2 for new resources should be the approval of this Standard. NERC Reliability Standards should be forward looking and should not be aligned to compliance measures or dates from previous versions of Reliability Standards or approval dates of Glossary Terms.	

Likes 0	
Dislikes 0	

Response

Ruchi Shah - AES - AES Corporation - 5

Answer	No
Document Name	

Comment

AES US Renewables believe the February 16, 2023 date should not be used as demarcation. Typically, once FERC approves a standard, there is a period prior to the standard becoming enforceable. Using the FERC approval date does not follow the typical implementation process and is unreasonable. Instead it should follow the EOP-012-1 Implementation Plan that was part of the package that was approved by FERC on 2/16/2023. Per the Implementation Plan, EOP-012-1 along with the definitions of three new terms were supposed to become effective on 10/1/2024. We strongly recommend using 10/1/2024 as the demarcation date.

Likes 0	
Dislikes 0	

Response

Chantal Mazza - Chantal Mazza On Behalf of: Junji Yamaguchi, Hydro-Quebec (HQ), 1, 5; Nicolas Turcotte, Hydro-Quebec (HQ), 1, 5; - Chantal Mazza

Answer	No
Document Name	

Comment

HQ support NB Power's comment: "There is no reason to split the language into two parts around February 16, 2023. Requirement R2 will only apply once the unit is in commercial operation, and a corrective action plan for freeze protection measures that is required to be completed prior to commercial operation is not really different from simply requiring the freeze protection measures to be in place as of the date of commercial operation. As an aside, the language in R2 should be updated to provide 32 km/hr as an equivalent wind speed to 20 mph."

HQ offers the following comment: "Under Requirement R2, we recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which ECWT definition becomes effective in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada."

Likes 0	
Dislikes 0	

Response

Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion

Answer	No
Document Name	
Comment	
Dominion Energy supports EEi comments but would like to clarify that an effective date dependent on a term pending stakeholder approval is not tenable. Effective dates should occur after stakeholders are aware of the requirements and what defined terms mean.	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	No
Document Name	
Comment	
TEPC agrees with EEI's comments: *we ask that the date used for Requirement R2, subparts 2.1 and 2.2 for new resources should be the approval of this Standard. NERC Reliability Standards should be forward looking and should not be aligned to compliance measures or dates from previous versions of Reliability Standards or approval dates of Glossary Terms.*	
Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 5	

Answer	No
Document Name	
Comment	
AZPS agrees with EEI's comments submitted on behalf of its members that the effective date of this Standard would be a more suitable choice as the date of demarcation. AZPS agrees with EEI that NERC Reliability Standards should be forward looking and not be aligned to dates in the past.	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation supports the comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and the Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) on question 4	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	

Answer	No
Document Name	
Comment	

Manitoba Hydro support Hydro Quebec's comment: "There is no reason to split the language into two parts around February 16, 2023. Requirement R2 will only apply once the unit is in commercial operation, and a corrective action plan for freeze protection measures that is required to be completed prior to commercial operation is not really different from simply requiring the freeze protection measures to be in place as of the date of commercial operation. As an aside, the language in R2 should be updated to provide 32 km/hr as an equivalent wind speed to 20 mph."

Manitoba Hydro supports BC Hydro's comments: "Under Requirement R2, BC Hydro recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada."

Likes 0	
Dislikes 0	
Response	

Joshua London - Eversource Energy - 1, Group Name Eversource

Answer	No
Document Name	
Comment	

Eversource supports the comments of EEI.

Likes 0	
Dislikes 0	
Response	

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro

Answer	No
Document Name	
Comment	

Under Requirement R2, BC Hydro recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada.

Likes 0	
Dislikes 0	
Response	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	
The date used should be the NERC effective date of the ECWT.	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
It is the opinion of ACES that the second bullet point of Requirement 2, Part 2.1 would be clearer if the phrase “upon beginning commercial operation” were changed to “prior to beginning commercial operation”.	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
The revised language is clear and acceptable as written.	
Likes 0	
Dislikes 0	

Response	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	
NRG does not have any concern with the designation of Feb 16, 2023 as the date of demarcation for when the corrective actions would be required for units that achieve commercial operation after Oct 1, 2027. NRG believes that the sub bullet for documenting a declaration with justification for a Generator Cold Weather Constraint should be applicable to R2.1 as well as R2.2.	
Likes 0	
Dislikes 0	
Response	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
NRG does not have any concern with the designation of Feb 16, 2023 as the date of demarcation for when the corrective actions would be required for units that achieve commercial operation after Oct 1, 2027. NRG believes that the sub bullet for documenting a declaration with justification for a Generator Cold Weather Constraint should be applicable to R2.1 as well as R2.2.	
Likes 0	
Dislikes 0	
Response	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	Yes
Document Name	
Comment	
PG&E agrees that this DT draft clarifies that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit’s commercial operation date.	
Likes 0	

Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no concerns.	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	
Document Name	
Comment	
OPG support NB Power's comment: "There is no reason to split the language into two parts around February 16, 2023. Requirement R2 will only apply once the unit is in commercial operation, and a corrective action plan for freeze protection measures that is required to be completed prior to commercial operation is not really different from simply requiring the freeze protection measures to be in place as of the date of commercial operation. As an aside, the language in R2 should be updated to provide 32 km/hr as an equivalent wind speed to 20 mph." OPG support HQ comment: "Under Requirement R2, we recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which ECWT definition becomes effective in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada." OPG has the following alternative comment: The date of February 16, 2023, when the definition of Extreme Cold Weather Temperature was approved by FERC it is not equivalent with a compliance requirement, unless accompanied by an applicable effective standard. The recommendation is to use instead the effective date for the new EOP-012-3 to be enforceable for non-US entities, as applicability criteria for the Generator Owner first contractual commitment to design criteria.	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	

Constellation supports NAGF Comments

Kimberly Turco on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer	
Document Name	

Comment

Texas RE has the following comments on Requirement R2:

Texas RE suggests a grammatical review be conducted for the second bullet in Requirement Part 2.1. It looks like there either a misplaced parenthetical or it needs a closing parenthetical, or it needs an “or” or an “and” after the first comma.

Texas RE is concerned that the measures do not require dated evidence for demonstrating contractual design criteria commitment before February 16, 2023. Texas RE recommends the following revision to the measure (in bold):

M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its unit(s) in accordance with R2, or it has developed a Corrective Action Plan or declared a Generator Cold Weather Constraint for the identified issues. **Each GO shall have dated evidence that demonstrates the signed contractual design criteria commitments in accordance with 2.1 and/or 2.2.** Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature under Requirement R1 Part 1.2.2 which is equal to or less than the unit’s Extreme Cold Weather Temperature, documentation of freeze protection measures, Corrective Action Plan(s) (if applicable), and Generator Cold Weather Constraints (if applicable).

Likes 1	JEA, 1, McClung Joseph
Dislikes 0	

Response

5. In paragraph 72 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to clarify that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

The drafting team provided updated language in Requirement R2 Part 2.2 to address the issue of units in newer stages of design and construction. February 16, 2023 was chosen as a date of demarcation as that was the date the Extreme Cold Weather Temperature was approved by FERC. Units committed to design criteria on or after February 16, 2023 do not have the option to utilize a Corrective Action Plan but may still declare a Generator Cold Weather Constraint. Do you agree that revisions to Requirement R2 Part 2.2 address this directive? If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	No
Document Name	
Comment	
Under Requirement R2, BC Hydro recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada.	
Likes 0	
Dislikes 0	
Response	

Joshua London - Eversource Energy - 1, Group Name Eversource	
Answer	No
Document Name	
Comment	
Eversource supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	

Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	

Comment
Manitoba Hydro supports BC Hydro's comments: "Under Requirement R2, BC Hydro recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada."

Likes 0	
Dislikes 0	

Response

Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples

Answer	No
Document Name	

Comment
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and the Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) on question 5

Likes 0	
Dislikes 0	

Response

Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments

Answer	No
Document Name	

Comment
Black Hills Corporation supports the comments submitted by EEI.

Likes 0	
Dislikes 0	

Response

Andrew Smith - APS - Arizona Public Service Co. - 5

Answer	No

Document Name	
Comment	
AZPS does not agree per the same comment as question number 4	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	No
Document Name	
Comment	
TEPC agrees with EEI's comments: *we do not agree that compliance date should be aligned to when a glossary term is approved. We also note that there are other changes within the proposed standard that could impact what an entity includes in the design of their resource beyond the definition of Extreme Cold Weather Temperature, including the proposed definition of Generator Cold Weather Constraint*.	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the comments of EEI as stated in response to Question 4.	
Likes 0	
Dislikes 0	
Response	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	

Comment	
See comments to Q4 please.	
Likes 0	
Dislikes 0	
Response	
Chantal Mazza - Chantal Mazza On Behalf of: Junji Yamaguchi, Hydro-Quebec (HQ), 1, 5; Nicolas Turcotte, Hydro-Quebec (HQ), 1, 5; - Chantal Mazza	
Answer	No
Document Name	
Comment	
HQ supports BC Hydro's comments: "Under Requirement R2, BC Hydro recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada." HQ supports NB Power's comment: "The second option in Part 2.2 opens the possibility of a Generator Cold Weather Constraint, including a pre-approving constraints based on criteria in Attachment 1 that may not be appropriate in the future. Future units should simply be engineered to provide the required freeze protection measures. If there is any need for exceptions, they should be handled on a case-by-case basis. As an aside, the language in R2 should be updated to provide 32 km/hr as an equivalent wind speed to 20 mph."	
Likes 0	
Dislikes 0	
Response	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
AES US Renewables agree with the proposed revision. However, we do not agree with the demarcation date. Please refer to our response to Question 4.	
Likes 0	
Dislikes 0	
Response	

Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	
Avista does not support the February 16, 2023, date for the reasons given to our response in Question 4.	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
Same comment as for question 4 above.	
Likes 0	
Dislikes 0	
Response	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	No
Document Name	
Comment	
Ameren agrees with EEI's comments.	
Likes 0	
Dislikes 0	
Response	
Jeffrey Streifling - NB Power Corporation - 1	

Answer	No
Document Name	
Comment	

NB Power supports BC Hydro's comments: "Under Requirement R2, BC Hydro recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada."

The second option in Part 2.2 opens the possibility of a Generator Cold Weather Constraint, including a pre-approving constraints based on criteria in Attachment 1 that may not be appropriate in the future. Future units should simply be engineered to provide the required freeze protection measures. If there is any need for exceptions, they should be handled on a case-by-case basis.

The language in R2 should be updated to provide 32 km/hr as an equivalent wind speed to 20 mph.

Likes 0	
Dislikes 0	
Response	

Mike Magruder - Avista - Avista Corporation - 1

Answer	No
Document Name	
Comment	

We do not support the February 16, 2023, date for the reasons given to our response in Question 4.

Likes 0	
Dislikes 0	
Response	

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer	No
Document Name	
Comment	

EEI does not support the February 16, 2023, date for the reasons given to our response in Question 4.

Likes 0	
Dislikes 0	

Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation does not agree and refers back to the answer in #2 and #4 above.	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	
Comment	
NV Energy does not support the February 16, 2023, date for the reasons given to our response in Question 4.	
Likes 0	
Dislikes 0	
Response	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	
See EEI Comments	
Likes 0	
Dislikes 0	
Response	

Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	No
Document Name	
Comment	
Response given to question 4	
Likes 0	
Dislikes 0	
Response	
Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	
Comment	
Invenergy disagrees that the revisions to Requirement 2 address the FERC directive. If the intent is for corrective action plans to be completed prior to the generating unit's commercial operation date and for the entity to have the capability to operate at the unit's ECWT for at least 12 hours, then it is unnecessary to divide this requirement into separate tracks based on the approval date of the ECWT definition. As such, we recommend returning to the language of EOP-012-2 and replacing the CAP language with constraint declaration language. If two tracks are to be pursued, then we disagree that February 16, 2023, is the most reasonable date of demarcation to address the issue of units in different stages of design and construction and instead proposes October 1, 2024. The effective date of EOP-012-2 presents as a more reasonable alternative by which industry would have received sufficient notice of the approval of the ECWT definition and had an opportunity to calculate that value for incorporation in the design criteria of new generating units.	
Likes 0	
Dislikes 0	
Response	
Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	
Comment	
Invenergy disagrees that the revisions to Requirement 2 address the FERC directive. If the intent is for corrective action plans to be completed prior to the generating unit's commercial operation date and for the entity to have the capability to operate at the unit's ECWT for at least 12 hours, then it is	

unnecessary to divide this requirement into separate tracks based on the approval date of the ECWT definition. As such, we recommend returning to the language of EOP-012-2 and replacing the CAP language with constraint declaration language.

If two tracks are to be pursued, then we disagree that February 16, 2023, is the most reasonable date of demarcation to address the issue of units in different stages of design and construction and instead proposes October 1, 2024.

The effective date of EOP-012-2 presents as a more reasonable alternative by which industry would have received sufficient notice of the approval of the ECWT definition and had an opportunity to calculate that value for incorporation in the design criteria of new generating units.

Likes 0	
Dislikes 0	

Response

Robert Blackney - Edison International - Southern California Edison Company - 1

Answer	No
Document Name	

Comment

See comments submitted by EEI.

Likes 0	
Dislikes 0	

Response

Stephanie Kenny - Edison International - Southern California Edison Company - 6

Answer	No
Document Name	

Comment

See EEI comments

Likes 0	
Dislikes 0	

Response

Natalie Johnson - Enel Green Power - 5

Answer	No
Document Name	

Comment	
Enel North America agrees with EEI's comments.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no concerns.	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	Yes
Document Name	
Comment	

PG&E agrees that this DT draft clarifies that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

Likes 0	
Dislikes 0	

Response

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC

Answer	Yes
Document Name	

Comment

The revised language is clear and acceptable as written.

Likes 0	
Dislikes 0	

Response

Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)

Answer	Yes
Document Name	

Comment

The SRC recommends that the upcoming technical conference include discussion of the extent to which it is appropriate to allow constraints under Part 2.2 of Requirement R2, as the units described in Part 2.2 should generally be designed and constructed to achieve the necessary level of extreme cold weather performance, and the standard should incentivize the development of more effective freeze protection measures over the course of time. If the discussion indicates that there is a technical basis for allowing constraints for this category of units, it should also address whether these units should qualify for all of the constraint criteria listed in Attachment 1 or only a subset of the criteria.

Subject to any additional information that may become available at the technical conference, the SRC recommends that if constraints are allowed for the units described in Part 2.2 of Requirement R2, these units should only be eligible to declare constraints under item 5 of the case-by-case constraint list. In light of the goal of incentivizing development of more effective freeze protection measures, the SRC believes the accelerated review process used for the accelerated approval constraint list is not appropriate for the units described in Part 2.2. Any constraint declared by a Part 2.2 unit should be reviewed under item 5 of the case-by-case constraint list, even if the constraint might otherwise fall under the accelerated approval constraint list.

Likes 0	
Dislikes 0	

Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	

Comment
Texas RE recommends clarifying some of the footnotes: • Footnote 1 - Reword to remove “this designation”. Texas RE suggests the following verbiage: “COD means that the facility has received all approvals necessary for operation after completion of initial start-up testing.” • Footnotes 3 and 5 - Include the word “dated”. Texas RE suggests the following verbiage: “Such commitments would be demonstrated by dated and signed contractual commitments, **dated** emailed correspondence agreeing to thermal design criteria, or other similar dated documented evidence.” • In Footnotes 4 and 6, Texas RE recommends the date be clearer. As it is currently written, it is referring to the date of the governmental authority’s order. Is this the intent? If the intent is to refer to the effective date of the definitions, it should state that and reference the implementation plan.

Likes 0	
Dislikes 0	

Response

Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	
Document Name	

Comment
The date used should be the NERC effective date of the ECWT.

Likes 0	
Dislikes 0	

Response

Kimberly Turco - Constellation - 6	
Answer	
Document Name	

Comment
Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	
Document Name	
Comment	
NA	
Likes 0	
Dislikes 0	
Response	
Alan Wahlstrom - Southwest Power Pool, Inc. (RTO) - NA - Not Applicable - MRO,WECC	
Answer	
Document Name	
Comment	
SPP agrees with the comments of The ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Likes 0	
Dislikes 0	
Response	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	
Document Name	
Comment	
OPG supports BC Hydro's comments: "Under Requirement R2, BC Hydro recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada." OPG supports NB Power's comment: "The second option in Part 2.2 opens the possibility of a Generator Cold Weather Constraint, including a pre-approving constraints based on criteria in Attachment 1 that may not be appropriate in the future. Future units should simply be engineered to provide	

the required freeze protection measures. If there is any need for exceptions, they should be handled on a case-by-case basis. As an aside, the language in R2 should be updated to provide 32 km/hr as an equivalent wind speed to 20 mph." OPG has the following alternative comment: The date of February 16, 2023, when the definition of Extreme Cold Weather Temperature was approved by FERC it is not equivalent with a compliance requirement, unless accompanied by an applicable effective standard. The recommendation is to use instead the effective date for the new EOP-012-3 to be enforceable for non-US entities, as applicability criteria for the Generator Owner first contractual commitment to design criteria.	
Likes 0	
Dislikes 0	
Response	
Wayne Guttormson - SaskPower - 1	
Answer	
Document Name	
Comment	
Support BC Hydro's comments.	
Likes 0	
Dislikes 0	
Response	

6. In paragraph 76 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to address certain ambiguities by expanding on Requirement R7.1.1 and 7.1.2 to make it clear which corrective action plan implementation deadline applies when a generator owner must implement both remedying issues with existing and installing new freeze protection measures.

The drafting team clarified Requirement R7 for Corrective Action Plans developed in accordance with Requirements R1, R2, or R3. Do you agree that revisions to Requirement R7 address this directive to differentiate between the existing and new freeze protection measures? If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators

Answer	No
Document Name	

Comment

We at ACES understand the difficulty faced by the drafting team in complying with this FERC directive. We especially appreciate the effort taken by the drafting team to limit the scope of the changes while also complying with the FERC directive. However, we feel as though the addition to the language of part 7.1.1 creates more confusion than it remedies. We recommend that the drafting team consider other alternatives such as adding an additional sub-part to both Part 7.1.1 and Part 7.1.2.

We recommend modifying Requirement R7, Part 7.1as follows:

R7. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, or R3 shall, as applicable:

7.1 Include a timetable for implementing the applicable type(s) of corrective action(s) that shall:

7.1.1. List modification(s) to existing (or previously planned pursuant to Requirement 2, Part 2.1) freeze protection measures, if any;

7.1.1.1. Any item listed in accordance with Part 7.1.1 shall be completed within 24 calendar months of completing development of the Corrective Action Plan.

7.1.2. List new freeze protection measures, if any, and

7.1.2.1 Any item listed in accordance with Part 7.1.2 shall be completed within 48 calendar months of completing development of the Corrective Action Plan.

7.1.3. Describe the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures.

Likes 0	
Dislikes 0	

Response

Selene Willis - Edison International - Southern California Edison Company - 5

Answer	No
Document Name	

Comment	
See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation agrees that this addresses FERC's directive, but does not agree that this is the appropriate avenue. It places undue administrative burden on both facilities and CEA's without providing adequate solutions to the underlying issues of effective freeze prevention equipment.	
Likes 0	
Dislikes 0	
Response	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	No
Document Name	
Comment	
It might have been clearer to keep the standard, including R7, focussed on new units and freeze control measures and put requirements for retrofitting existing units in the implementation plan.	
Likes 0	
Dislikes 0	
Response	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	No
Document Name	
Comment	

The 3 types of items required to complete a Corrective Action Plan (CAP) under R1, R2 and R3 are the same 3 types of items required to complete a Corrective Action Plan under R6, qualified personnel, proper materials, and the required plant conditions. A Cold Weather Reliability Event does not change the circumstances required to correct the cause. Evidence to support implementation timelines should be retained for following audits of the Standard.

Likes 0	
Dislikes 0	

Response

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro

Answer	No
Document Name	

Comment

Requirement R7: in Parts 7.1.1 and 7.1.2 the current wording " list the action(s) … to be completed" can be seen as ambiguous as to which actions need to be listed, i.e. whether all actions need to be planned for completion within in the specified timeframe, or whether only those actions planned to be completed in the timeframe would need to be listed.

As well, in Part 7.1.1 adding the "regardless of any longer timelines in … associated with new freeze protection measures;" may add ambiguity, i.e. 7.1.2 is for new FPM so adding this to existing FPM could cause confusion on expectations. As well, in Part 7.1.2, the wording "List the action(s) which require(s) new freeze protection measures …" is ambiguous and could be interpreted as listing items such as, Needing a CAP due to a recalculated Temperature per Part 1.1.1, as opposed to actions to implement such as, Select vendor to supply new FPM.

BC Hydro recommends revising R7 and Parts 7.1 with its subparts 7.1.1 through 7.1.3 for clarity. Please see suggested wording below:

R7. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, or R3, shall:

7.1. Include a timetable for implementing the Corrective Action Plan that:

7.1.1. For remediating issues with existing freeze protection measures, if any, the corrective actions shall be completed within 24 calendar months of completing development of the Corrective Action Plan; and

7.1.2. For adding new freeze protection measures, if any, the corrective actions shall be completed within 48 calendar months of completing development of the Corrective Action Plan; and

7.2. Contain a description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required.

Likes 0	
Dislikes 0	

Response

Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Natalie Johnson - Enel Green Power - 5	
Answer	Yes
Document Name	
Comment	
Enel North America agrees with EEI's and NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Stephanie Kenny - Edison International - Southern California Edison Company - 6	
Answer	Yes
Document Name	
Comment	
See EEI comments	
Likes 0	
Dislikes 0	
Response	
Robert Blackney - Edison International - Southern California Edison Company - 1	
Answer	Yes
Document Name	

Comment	
See comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	Yes
Document Name	
Comment	
Perhaps, the standard drafting team creates a form to be included and completed in the attachments as the formatting of a corrective action plan.	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
NV Energy supports the proposed changes to Requirement R7, and we agree that these changes address the directive to differentiate between the existing and new freeze protection measures.	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	

MP supports the proposed changes to Requirement R7, and we agree that these changes address the directive to differentiate between the existing and new freeze protection measures.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI supports the proposed changes to Requirement R7, and we agree that these changes address the directive to differentiate between the existing and new freeze protection measures.	
Likes 0	
Dislikes 0	
Response	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	
Comment	
We support the proposed changes to Requirement R7, and we agree that these changes address the directive to differentiate between the existing and new freeze protection measures.	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	

The revised language is clear and acceptable as written.	
Likes 0	
Dislikes 0	
Response	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	Yes
Document Name	
Comment	
Ameren agrees with EEI's and NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Robert Follini - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Avista supports the proposed changes to Requirement R7, and we agree that these changes address the directive to differentiate between the existing and new freeze protection measures.	
Likes 0	
Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	
NRG believes the language used here is clear.	

Likes 0	
Dislikes 0	

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5

Answer	Yes
Document Name	

Comment

NRG believes the language used here is clear.

Likes 0	
Dislikes 0	

Response

Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle

Answer	Yes
Document Name	

Comment

PG&E agrees that revisions to Requirement R7 address the directive to differentiate between the existing and new freeze protection measures.

Likes 0	
Dislikes 0	

Response

Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group

Answer	Yes
Document Name	

Comment

WEC Energy Group supports the comments of EEI.

Likes 0	

Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
AZPS agrees with these changes.	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no concerns.	
Likes 0	
Dislikes 0	
Response	

Rhonda Jones - Invenergy LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Colin Chilcoat - Invenergy LLC - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Joshua London - Eversource Energy - 1, Group Name Eversource	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	

7. The drafting team provided language in the Implementation Plan to address parts 3 through 5 of paragraph 4 of the June 2024 Order addressing FERC's concerns regarding urgency. The Standard language updates were written to meet the core directives in an effective and efficient manner while providing language that is objective, unambiguous, and auditable. With EOP-012-2 already effective October 1, 2024 (with the exception of Requirement R3), the changes made were intended to meet the FERC Directives without adding significantly to the efforts already in progress. Do you agree that the associated Implementation Plan meets the Directives? If you do not agree but believe the Directives can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer	No
Document Name	

Comment

The current implementation plan would require a resubmission of any declaration under EOP-012-2. This would create redundant work and confusion around tracking. Suggest adding language a "grandfathering" process for existing units.

Likes 0	
Dislikes 0	

Response

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF

Answer	No
Document Name	

Comment

Duke Energy agrees with and supports the NAGF's response to question 7.

Likes 0	
Dislikes 0	

Response

Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples

Answer	No
Document Name	

Comment

Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and the North American Generator Forum (NAGF) on question 7	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation supports the comments submitted by NAGF.	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	No
Document Name	
Comment	
TEPC agrees with EEI's response: *EEI does not agree with the current proposed changes to EOP-012, therefore, we are unable to support the Implementation Plan at this time.*	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	

WEC Energy Group supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	
Comment	
Dominion Energy supports EEI comments.	
Likes 0	
Dislikes 0	
Response	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	No
Document Name	
Comment	
PG&E supports NAGF concerns regarding providing clarification for how existing declarations under EOP-012-2 are to be transitioned under EOP-012-3.	
Likes 0	
Dislikes 0	
Response	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	No
Document Name	
Comment	

NRG is in agreement with NAGF as the potential confusion related to declaration made under EOP-012-2 and how these will be addressed under EOP-012-3. More information is needed related to the process to be used to address these declarations made under the current standard, including the expectations for these existing declarations, timelines related to rejected declarations and any other obligations related to these declarations.

Likes 0	
Dislikes 0	

Response

Martin Sidor - NRG - NRG Energy, Inc. - 6

Answer	No
Document Name	

Comment

NRG is in agreement with NAGF as the potential confusion related to declaration made under EOP-012-2 and how these will be addressed under EOP-012-3. More information is needed related to the process to be used to address these declarations made under the current standard, including the expectations for these existing declarations, timelines related to rejected declarations and any other obligations related to these declarations.

Likes 0	
Dislikes 0	

Response

Ruchi Shah - AES - AES Corporation - 5

Answer	No
Document Name	

Comment

AES US Renewables support NAGF comments for this question NAGF comments:

The NAGF is concerned with the potential confusion related to declaration made under EOP-012-2 and how these will be addressed under EOP-012-3. More information is needed related to the process to be used to address these declarations made under the current standard, including the expectations for these existing declarations, timelines related to rejected declarations and any other obligations related to these declarations. Additional support for this position is provided under question 9.

Next, the NAGF believes that the requirement to create duplicative CAPs and declarations over the years and have them approved for an approved event is extremely inefficient for both the registered entities and NERC and the regions. This issue should be addressed through modifications to R6 or the definition of Generator Cold Weather Reliability Event. Prior to the requirement to request approval for these declarations, the repetition was likely manageable. But with the additional requirements related to both the filing process and the requirements, this is likely to become a documentation issue that detracts from the reliable operation of the grid.

Likes 0	

Dislikes 0	
Response	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	
Avista does not agree with the current proposed changes to EOP-012, therefore, we are unable to support the Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
The NAGF is concerned with the potential confusion related to declaration made under EOP-012-2 and how these will be addressed under EOP-012-3. More information is needed related to the process to be used to address these declarations made under the current standard, including the expectations for these existing declarations, timelines related to rejected declarations and any other obligations related to these declarations. Additional support for this position is provided under question 9. In addition, the NAGF believes that the requirement to create duplicative CAPs and declarations over the years and have them approved for an approved event is extremely inefficient for both the registered entities and NERC and the regions. This issue should be addressed through modifications to R6 or the definition of Generator Cold Weather Reliability Event. Prior to the requirement to request approval for these declarations, the repetition was likely manageable. But with the additional requirements related to both the filing process and the requirements, this is likely to become a documentation issue that detracts from the reliable operation of the grid.	
Likes 0	
Dislikes 0	
Response	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	No
Document Name	
Comment	

Ameren agrees with NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	
Comment	
We do not agree with the current proposed changes to EOP-012, therefore, we are unable to support the Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	
EEI does not agree with the current proposed changes to EOP-012, therefore, we are unable to support the Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	
Comment	
Vistra supports NAGF Comments	

Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation does not agree, and notes that the revision of this standard increases undue administrative burden on industry and CEA's without effectively addressing freeze protection technology and requirements.	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
MP feels more clarity is needed on items in Question #1 and #3, therefore is unable to support the Implementation Plan at this time. Additionally, MP supports NAGF comments on Question #7 response related to the requirements to complete duplicative CAPs and declarations over the years and have them approved is extremely inefficient for registered entities and NERC. The addition of the approvals process greatly increases the inefficiencies related to minor refinements that may be needed to the Generator Cold Weather Reliability Event definition.	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	
Comment	
NV Energy does not agree with the current proposed changes to EOP-012, therefore, we are unable to support the Implementation Plan at this time.	

Likes 0	
Dislikes 0	
Response	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	
See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	No
Document Name	
Comment	
PNM agrees with the comments of EEI. *EEI does not agree with the current proposed changes to EOP-012, therefore, we are unable to support the Implementation Plan at this time.*	
Likes 0	
Dislikes 0	
Response	
Robert Blackney - Edison International - Southern California Edison Company - 1	
Answer	No
Document Name	
Comment	
See comments submitted by EEI.	
Likes 0	

Dislikes 0	
Response	
Stephanie Kenny - Edison International - Southern California Edison Company - 6	
Answer	No
Document Name	
Comment	
See EEI comments	
Likes 0	
Dislikes 0	
Response	
Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	
Comment	
Enel North America supports EEI's response and does not agree with the current proposed changes to EOP-012, therefore, Enel North America is unable to support the Implementation Plan.	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no concerns.	
Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
AZPS does not disagree with the proposed implementation plan.	
Likes 0	
Dislikes 0	
Response	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
NERC should clarify how the constraint declaration process for EOP-012-2 (currently in effect) will be handled and addressed by the Regional Entities for the 2024-2025 winter season since EOP-012-3 will not be approved until a future date, possibly in 2025.	
Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Colin Chilcoat - Invenergy LLC - 6	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rhonda Jones - Invenergy LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	

8. Do you agree with the Implementation Plan for EOP-012-3? If you do not agree, please propose an alternate implementation plan with a detailed explanation.	
Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	
Comment	
Enel North America agrees with NAGF's comments that additional information is required regarding the process for handling these declarations made under the current standard. This includes expectations for existing declarations, timelines for rejected declarations, and any other related obligations.	
Likes 0	
Dislikes 0	
Response	
Stephanie Kenny - Edison International - Southern California Edison Company - 6	
Answer	No
Document Name	
Comment	
See EEI comments	
Likes 0	
Dislikes 0	
Response	
Robert Blackney - Edison International - Southern California Edison Company - 1	
Answer	No
Document Name	
Comment	
See comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	

Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	
Comment	
Invenergy needs more clarity regarding the revisions to the standard before it can comment on the Implementation plan.	
Likes 0	
Dislikes 0	
Response	
Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	
Comment	
Invenergy needs more clarity regarding the revisions to the standard before it can comment on the Implementation plan.	
Likes 0	
Dislikes 0	
Response	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	No
Document Name	
Comment	
PNM agrees with the comments of EEI: *While EEI does not object to the proposed Implementation Plan, we do not support the proposed changes to EOP-012 and therefore cannot support the Implementation Plan at this time.*	
Likes 0	
Dislikes 0	
Response	

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	No
Document Name	
Comment	

: It is the opinion of ACES that the effective date language for Requirements R2, R6, R7, and R8 is overly verbose and ambiguous. We recommend modifying the Implementation Plan as follows:

Effective Date and Phased-In Compliance Dates

Compliance Date for EOP-012-3 Requirement R2 – New Generating Units

Entities beginning commercial operation after the effective date of EOP-012-3 shall become compliant with Requirement R3 no later than the commercial operations date for the applicable unit. Any Generator Cold Weather Constraint shall be submitted in accordance with the timeline provided in Requirement R8.

Compliance Date for EOP-012-3 Requirement R6

Entities shall comply with Requirement R6 by the effective date of the Standard.

Compliance Date for EOP-012-3 Requirement R7

Entities shall comply with Requirement R7 by the effective date of the Standard.

Compliance Date for EOP-012-3 Requirement R8

Entities shall comply with Requirement R8 by the effective date of the Standard.

Any entity that previously declared one or more Generator Cold Weather Constraint(s) under Reliability Standard EOP-012-2 shall perform a review of any such declaration(s) for compliance with Reliability Standard EOP-012-3 Attachment 1 by the effective date. The entity shall submit any previously declared Generator Cold Weather Constraint(s) no later than 45 days following the effective date of Reliability Standard EOP-012-3.

Likes 0	
Dislikes 0	
Response	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	

Comment	
See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
Until the final version of the standard is complete, MP is unable to provide a position on the implementation plan.	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation does not agree. We recommend that more input be requested from GO/GOP's in industry prior to issuing a draft for comment allowing for a more effective and complete standard.	
Likes 0	
Dislikes 0	
Response	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	
Comment	

Vistra Agrees with comments made by Duke Energy.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	
While EEI does not object to the proposed Implementation Plan, we do not support the proposed changes to EOP-012 and therefore cannot support the Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	
Comment	
While we do not object to the proposed Implementation Plan, we do not support the proposed changes to EOP-012 and therefore cannot support the Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	No
Document Name	
Comment	

Ameren agrees with EEI's and NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
Until the final version of the standard is completed, the NAGF is unable to provide a position on the implementation plan.	
Likes 0	
Dislikes 0	
Response	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	
While Avista does not object to the proposed Implementation Plan, we do not support the proposed changes to EOP-012 and therefore cannot support the Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	

AES US Renewables is concerned with the current implementation plan which requires an entity to submit previously declared constraint under EOP-012-2 for compliance with EOP-012-3 no later than 45 days following the effective date of EOP-012-3. While the 45-day timeline is not a major concern, we have questions for the drafting team to consider:

- Cost constraints that are allowed in EOP-012-2 are no longer allowed in EOP-012-3. If this constraint is denied by the CEA under EOP-012-3, what is the process and associated timelines that entities need to follow for recourse?
- Is there a possibility for entities to make changes to the constraint declared under EOP-012-2 before submittal to CEA under EOP-012-3 to conform to the Attachment 1 criteria?

Likes 0	
Dislikes 0	

Response

Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle

Answer	No
Document Name	

Comment

Until the final version of the standard is completed, PG&E is unable to provide a position on the implementation plan.

Likes 0	
Dislikes 0	

Response

Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group

Answer	No
Document Name	

Comment

WEC Energy Group supports the comments of EEI.

Likes 0	
Dislikes 0	

Response

Jessica Cordero - Unisource - Tucson Electric Power Co. - 1

Answer	No

Document Name	
Comment	
TEPC agrees with EEI's response: *EEI does not agree with the current proposed changes to EOP-012, therefore, we are unable to support the Implementation Plan at this time.*	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation does not agree with the proposed changes to EOP-012, therefore, will not comment on the Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and the North American Generator Forum (NAGF) on question 8	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No

Document Name	
Comment	
Duke Energy does not agree with the implementation plan for EOP-012-3. Due to the major changes to requirements R6, R7, and R8, a clear implementation date is required to allow the GOs to determine which standard criteria are required. Duke Energy recommends an implementation date of October 1, 2025.	
Likes 0	
Dislikes 0	
Response	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	
Standard language should be fixed prior to implementation review.	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	No
Document Name	
Comment	
Based on our comments associated with these ballots, BC Hydro is unable to support the standard implementation plan at this time.	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
AZPS does not disagree with the proposed implementation plan.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no concerns.	
Likes 0	

Dislikes 0	
Response	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kevin Conway - Western Power Pool - 4	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	
Document Name	
Comment	
While NV Energy does not object to the proposed Implementation Plan, we do not support the proposed changes to EOP-012 and therefore cannot support the Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	

Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	

9. Do you agree that EOP-012-3 is cost effective to address the Directives in the FERC Order? If you do not agree, or if you agree but have suggestions for improvement to enable more cost-effective approaches, please provide your recommendation and, if appropriate, technical, or procedural justification.

Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer	No
Document Name	

Comment

Accelerated timelines and redundant reporting criteria create inefficiencies in work processes for the GO. This includes potential unplanned maintenance outages to meet CAP implementation expectations.

Likes 0	
Dislikes 0	

Response

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF

Answer	No
Document Name	

Comment

Duke Energy's focus is on the reliable operation of the BES and will not submit comments on the cost effectiveness of the proposed changes to EOP-012-3.

Likes 0	
Dislikes 0	

Response

Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples

Answer	No
Document Name	

Comment

Evergy supports and incorporates by reference the comments of the North American Generator Forum (NAGF) on question 9

Likes 0	

Dislikes 0	
Response	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	No
Document Name	
Comment	
Timelines to complete CAPs shorter than those specified in R7 are not cost effective if qualified personnel, proper materials and required plant conditions are not available. Unplanned outages reduce reliability of the BES by causing units to be started and stopped outside of planned outage periods.	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group does not have specific comments with respect improvements to cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	No
Document Name	
Comment	
As identified above, as proposed, the modifications requiring multiple filings for what is likely to be annual events is unreasonable and extremely inefficient while not providing any improvement to reliability. NRG is in alignment with NAGF who asks for the SDT to address with the CEA how cost will be considered when the generation of documentation is excessive	
Likes 0	

Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	No
Document Name	
Comment	
As identified above, as proposed, the modifications requiring multiple filings for what are likely to be annual events is unreasonable and extremely inefficient while not providing any improvement to reliability. NRG is in alignment with NAGF who asks for the SDT to address with the CEA how cost will be considered when the generation of documentation is excessive.	
Likes 0	
Dislikes 0	
Response	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
AES US Renewables support NAGF comments for this question. NAGF comments: *As identified above, as proposed, the modifications requiring multiple filings for what is likely to be annual events is unreasonable and extremely inefficient while not providing any improvement to reliability. Ultimately, this is a documentation requirement that falls under paragraph 81. Efforts should be made to minimize the time and effort required to address the FERC order while trying to minimize the burden to industry. This can be done by modifying R6, to allow for the identification of the event being the same as a previous event and therefore the event falls under the already approved declaration. As one way to address this, Section 6.1.1 could have language added to allow the GO to state, once a review of the event is completed, that this event is similar or the same as the event addressed under the CAP dated XX/XX/XX that addresses the event that occurred on XX/XX/XXXX. This would end the process at that point and no further actions would be required, including creation of a new CAP, new constraint and a new filing to NERC to have them tell the GO they are correct.* *The NAGF recognizes that FERC has ordered that all reference to cost be removed. In discussions with OEM providers related to doing an engineering study the cost of the study to determine what it would take to improve the capability of generators is more than reasonable. In other words, the cost to do the study to determine the cost is very expensive, before any effort to improve the capability is made. The NAGF asks for the SDT to address with the CEA how cost will be considered when the generation of documentation is excessive.*	
Likes 0	

Dislikes 0	

Response

Robert Follini - Avista - Avista Corporation - 3

Answer	No
Document Name	

Comment

With the removal of the cost component in the Definition of the “Generator Cold Weather Constraint” it is very difficult to evaluate the cost effectiveness of the standard. Please retain the cost component in the definition of the “Generator Cold Weather Constraint” to ensure the Generation Owner has the ability to evaluate cold weather protections against reliability and availability impacts.

Likes 0	
Dislikes 0	

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer	No
Document Name	

Comment

As identified above, as proposed, the modifications requiring multiple filings for what is likely to be annual events is unreasonable and extremely inefficient while providing no improvement to reliability. Ultimately, this is a documentation requirement that falls under paragraph 81. Efforts should be made to minimize the time and effort required to address the FERC order while trying to minimize the burden to industry. This can be done by modifying R6, to allow for the identification of the event being the same as a previous event and therefore the event falls under the already approved declaration. As one way to address this, Section 6.1.1 could have language added to allow the GO to state, once a review of the event is completed, that this event is similar or the same as the event addressed under the CAP dated XX/XX/XX that addresses the event that occurred on XX/XX/XXXX. This would end the process at that point and no further actions would be required, including creation of a new CAP, new constraint and a new filing to NERC to have them tell the GO they are correct.

The NAGF recognizes that FERC has ordered that all reference to cost be removed. In discussions with OEM providers related to doing an engineering study, especially for increasing the tower strength of wind turbines, the cost of the study to determine what it would take to improve the capability of generators is such that they are unwilling to offer the service. In other words, the cost to do the study to determine the cost is very expensive, before any effort to improve the capability is made. The NAGF asks for the SDT to address with the CEA how cost will be considered when the generation of documentation is excessive.

Likes 0	
Dislikes 0	

Response

Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	No
Document Name	
Comment	
Ameren agrees with NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	
Comment	
With the removal of the cost component in the Definition of the “Generator Cold Weather Constraint” it is very difficult to evaluate the cost effectiveness of the standard. Please retain the cost component in the definition of the “Generator Cold Weather Constraint” to ensure the Generation Owner has the ability to evaluate cold weather protections against reliability and availability impacts.	
Likes 0	
Dislikes 0	
Response	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	
Comment	
Vistra Agrees with comments made by TVA.	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	

Answer	No
Document Name	
Comment	
Reclamation does not agree. As stated above, there is too much administrative burden that does not provide adequate empirical data over the lifetime of generating equipment in industry.	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
MP supports NAGF comments that multiple filings for repeated events such as icing on units where technology does not exist for a region to support freeze protection down to ECWT is extremely inefficient, unreasonable and provides no value to improvement of reliability.	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	No
Document Name	
Comment	
It is the opinion of ACES that as written, the proposed modifications to EOP-012 are not the most cost-effective approach. We recommend consideration of the modifications we proposed in our previous responses, specifically questions 2 and 8. It is our belief that implementing the proposed modifications will add clarity and therefore reduce the compliance burden for responsible entities.	
Likes 0	
Dislikes 0	
Response	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	

Answer	No
Document Name	
Comment	
Accelerated timelines and redundant reporting criteria create inefficiencies in work processes for the GO. This includes potential unplanned maintenance outages to meet CAP implementation expectations.	
Likes 0	
Dislikes 0	
Response	
Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	
Comment	
Invenergy is not able to comment on the cost effectiveness of the revisions to the proposed standard.	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	No
Document Name	
Comment	
The reduced timelines of completing CAPS required by R6 may result in extra costs to accelerate outages, material delivery and potentially availability costs to take unplanned outages to fast-track implementation. Further, Southern agrees with NAGF's comments.	
Likes 0	
Dislikes 0	
Response	

Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	
Comment	
Invenergy is not able to comment on the cost effectiveness of the revisions to the proposed standard.	
Likes 0	
Dislikes 0	
Response	
Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	
Comment	
Enel North America is concerned that timelines for completing CAPs that are shorter than those outlined in R7 are not cost-effective unless qualified personnel, appropriate materials, and necessary plant conditions are available. Additionally, the shorter timelines could cause an increase in unplanned outages that compromise the reliability of the BES by occurring outside scheduled outage periods.	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	

Answer	Yes
Document Name	
Comment	
FirstEnergy has no concerns.	
Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	
Document Name	
Comment	
Black Hills Corporation will not comment on cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	
Document Name	
Comment	

PG&E does not have any comments on the cost effectiveness of the drafted standard.	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	
Document Name	
Comment	
NA	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	
Document Name	
Comment	
NV Energy will not provide a response to the cost effectiveness of the proposed changes to EOP-012-2.	
Likes 0	
Dislikes 0	
Response	

10. Please provide any additional comments for the standard drafting team to consider, if desired.

Natalie Johnson - Enel Green Power - 5	
Answer	
Document Name	
Comment	

Enel North America agrees with the MRO NSRF recommendation that the standard drafting team ensure that any performance timelines for which a registered entity is to be held accountable by the CEA be explicitly defined in the requirement language and not a document that exists outside the structure of NERC Reliability Standards.

Likes 0	
Dislikes 0	
Response	

Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	
Document Name	
Comment	

OPG supports HQ comments: "R2 High and Severe VSL: The Lower VSL and Moderate VSL's text "The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) …." Is not reflected in the R2 High and Severe VSL. For consistency throughout the R2 VSLs, we suggest adding "for its applicable unit(s)" before "meeting the criteria in R2 …"

E2 Lower VSL: we suggest removing "to implement appropriate freeze protection measures" from the E2 Lower VSL to ensure consistency with the wording of the Moderate, High and Severe VSLs."

OPG supports Manitoba's comment regarding the wording around extremely low ECWTs: "Some of our ECWT is below -40 degree C. In discussions with our design team, many components only have a rating down to -40 degrees C. There should be some wording around extremely low ECWTs where it is not readily available (or economically possible to pursue) the purchase of equipment with that low of a temperature rating. (To clarify: we are talking about ECWTs around -43 degrees C and ratings of -40 degrees C. We are not suggesting equipment ratings of -15 degrees C vs -43 degree ECWT)."

OPG supports Manitoba Hydro's comment : "For R3 Manitoba Hydro recommends instead of referencing the October 1, 2027 date in the Requirement remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction."

OPG has the following comments:

NERC definition uses the concept of apparent cause(s), which is different from the Root Cause.

OPG suggest that SDT be consistent with other standards terminology (PRC-004-6 and PRC-010-2, where they are using the term “Root Cause”)

Please clarify, in the case of the Canadian entities that routinely and for extensive durations are operating at temperatures close to their respective ECWT (i.e. -40◦C), through what meteorological phenomenon it is possible to have freezing precipitation (e.g., sleet, snow, ice, and freezing rain) at that ECWT (i.e. -40◦C) that could impact equipment within the Generator Owner’s control. If rain will find it’s way to an equipment operating at -40◦C will actually warm-up that equipment. Basically, there could be only a very low probability of exacerbating cooling effect, involving the latent heat related to energy involved in water phase changes. Water vapors would release latent heat of fusion in the atmosphere long before reaching the BES Generation Units equipment, and unless they aggregate into falling chunks of ice it would most likely not be the root cause of “Generator Cold Weather Reliability Event”

We propose that impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner’s control, should be excluded for equipment with ECWT of -10◦C or below.

Likes 0	
Dislikes 0	

Response

Rhonda Jones - Invenergy LLC - 5

Answer	
Document Name	

Comment

Invenergy recommends using consistent language in R1.1.1. regarding updates to the cold weather preparedness plan and CAPs following a re-calculation of the ECWT. The requirement should use 6 months or 6 calendar months, but not both.

Likes 0	
Dislikes 0	

Response

Colin Chilcoat - Invenergy LLC - 6

Answer	
Document Name	

Comment

Invenergy recommends using consistent language in R1.1.1. regarding updates to the cold weather preparedness plan and CAPs following a re-calculation of the ECWT. The requirement should use 6 months or 6 calendar months, but not both.

Likes 0	
Dislikes 0	

Response

Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	
Document Name	
Comment	

PNM recommends that the standard drafting team ensure that any dates for which a registered entity is to be held to be in the requirement language and not a document that exists outside the structure of NERC Reliability Standards.

Standard Drafting team may consider creating an attached corrective action plan guideline to be filled out -

Likes 0	
Dislikes 0	
Response	

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	
Document Name	
Comment	

We at ACES appreciate the effort put forth by the SDT to modify EOP-012 under such an abbreviated timeline. It is our understanding that the specific intent of this project is to consider and implement the directives in the FERC Order; however, we believe that one additional modification should be considered by the SDT. Requirement 1, Part 1.1.1 contains an overlapping timeline for updating the entities' cold weather preparedness plan(s) and developing a Corrective Action Plan (CAP). As written, both actions require completion within six (6) calendar months of the recalculation of the Extreme Cold Weather Temperature (ECWT).

It is our contention that corrective actions will likely not be identified until after a cold weather preparedness plan is reviewed/updated. Thus, we believe that requiring both actions to be completed concurrently effectively shortens the time allowed for a cold weather preparedness plan to be reviewed and updated. Therefore, we contend that nine (9) calendar months is a more appropriate deadline for developing a CAP.

We recommend the following modification to Requirement R1 Part 1.1.1:

R1. At least once every five calendar years, each Generator Owner shall, for each of its applicable generating unit(s):

1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable unit(s) and identify the calculation date and source of temperature data; and

1.1.1. If the re-calculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall:

1.1.1.1. Review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation.

1.1.1.2. Develop a Corrective Action Plan for any new corrective actions needed to provide the required operational capability under Requirement R2 or R3 within nine (9) calendar months of the recalculation.

Thank you for the opportunity to comment.	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	
Document Name	
Comment	
NV Energy recommends that the standard drafting team ensure that any dates for which a registered entity is to be held to be in the requirement language and not a document that exists outside the structure of NERC Reliability Standards.	
Likes 0	
Dislikes 0	
Response	
Mark Flanary - Midwest Reliability Organization - 10	
Answer	
Document Name	
Comment	
MRO recommends that any performance timelines for which a registered entity will be held accountable by the CEA be explicitly defined in the requirement language.	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	
Document Name	
Comment	

The SRC recommends that the CAP extension and Constraint processes each be revised to include a Step 5 – NERC Reporting to Industry. Under this step 5, NERC would publish an annual report to provide industry insight into the types of constraints CEAs have approved and disapproved during the year, discuss lessons learned from the review and approval process, and provide Reliability Coordinators and Balancing Authorities insight into the cumulative impact of constraint approvals across fleets of resource types. This report would not include any confidential unit-specific information, and could coincide with or otherwise leverage NERC's annual report to FERC on Generator Cold Weather Constraint declarations.

Additionally, the SRC recommends that the Generator Cold Weather CAP Extension and Constraint Process be referenced in EOP-012-3, Section E, Associated Documents, since footnote 11 appears to reference this process.

The SRC also recommends that Requirement R7 be revised as follows to include a new Part 7.5 that clarifies that the existence of a CAP does not excuse a Generator Owner from taking such technically feasible steps as it can to improve the extreme cold weather performance of a unit while the CAP is being implemented:

7.5. Continue to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

Likes 0	
Dislikes 0	

Response

Alan Wahlstrom - Southwest Power Pool, Inc. (RTO) - NA - Not Applicable - MRO,WECC

Answer	
Document Name	

Comment

SPP agrees with the comments of The ISO/RTO Council (IRC) Standards Review Committee (SRC)

Likes 0	
Dislikes 0	

Response

Romel Aquino - Edison International - Southern California Edison Company - 3

Answer	
Document Name	EEI Near Final Revised Draft Comments _ Project 2024-03 _ Draft 1 _ Rev 0d _ 10_31_2024.docx

Comment

See EEI Comments

Likes 0	
Dislikes 0	

Response

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring

Answer	
Document Name	

Comment

In Requirement R1 Part 1.1.1- Consider adding “calendar” in later part of language to be consistent with added language. Consider “If new corrective actions are needed to provide the required operational capability under Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) **calendar** months of the recalculation.”

Measure M3 : The phrase “Identification of generating unit(s) minimum temperature per Part 1.2.2 which is equal to or less than the unit’s Extreme Cold Weather Temperature” needs to drop the latter part “which is equal to or less than the unit’s Extreme Cold Weather Temperature” as that statement could be incorrect. A unit’s minimum temperature might be above an ECWT due to a Generator Cold Weather Constraint or simply the geographical location of the unit.

Requirement R7 could be sharpened by removing “as applicable” to read as “Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, or R3 shall:, as applicable”. Requirement R7 requires a Corrective Action Plan condition to be evident and “as applicable” is not needed to differentiate if it is a R1, R2, or R3 Corrective Action Plan.

Suggest that language in Requirement R6 Part 6.2 and Requirement R7 Part 7.3 should be mirrored:

Requirement R6 Part 6.2 states: ”6.2 Update the Corrective Action Plan action(s) and timetable(s), with justification, and submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 6.1. The submitted Corrective Action Plan extension request shall include the following:

6.2.1. Circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

6.2.2. Revisions to the selected actions in Part 6.1, if any, including utilization of Operating Procedures, if applicable; and

6.2.3. Updated timetable for implementing the selected actions in Part 6.1.”

Requirement R7 Part 7.3 states: “7.3 Submit a Corrective Action Plan extension request, for the approval of the CEA, where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 7.1. The submitted request shall:

7.3.1 Explain the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.3.2 Include, as applicable, revisions to the selected actions in Part 7.1, including utilization of Operating Procedures; and

7.3.3 Include an updated timetable for implementing the selected actions in Part 7.1”

Suggest changing Requirement R7 Part 7.3 to mirror 6.2 and read as :

“7.3 Update the Corrective Action Plan action(s) and timetable(s), with justification, and submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 7.1. The submitted Corrective Action Plan extension request shall include the following:

7.3.1. Circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.3.2. Revisions to the selected actions in Part 7.1, if any, including utilization of Operating Procedures, if applicable; and

7.3.3. Updated timetable for implementing the selected actions in Part 7.1.”

Need to mirror language in Requirement 6 Part 6.3 and Requirement R7 Part 7.4. Requirement R6 Part 6.3 contains “if applicable” after “Requirement R8”. If the DT believes “if applicable” is appropriate it should be added (with appropriate punctuation) to Requirement R7 Part 7.4 to read “Document in a declaration, with justification, any Generator Cold Weather Constraint in accordance with Requirement R8**, if applicable**, that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.”

In Attachment 1, the phrase ”Heat tracing or other de-icing technologies for wind turbine blades that are not available in the Generator Owner’s location” may need some clarification. Is the DT’s thought the blades are “not available to the Generator Owner for the Generators Owner’s location” or simply “not available for the Generator Owner’s location.”?

For “Case-by-Case” criteria 3a- What does the DT consider as “premature” and does it vary based on generator type (e.g., wind versus natural gas unit)? Is “replacement” meant to reference the unit being retired? To be auditable a timetable such as “3 or more years” should be incorporated into the language. While conditions may vary for consideration of retirement there can not be a consideration for a replacement unit without the unit signaling to a TP/PC/BA that it was retiring

Consider updating the “Case-by-Case” criteria 3b to state: “The freeze protection measures would be applied to a generating unit that has a previously published retirement date **slated to occur** within three years of the Generator Cold Weather Constraint declaration; “

The definition provided in the Standard (to be included in the Glossary of Terms) for Generator Cold Weather Constraint and the definition language in the Technical Rationale for same term needs updated. The Standard states the definition as “Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components.” but the Technical Rationale states “A Generator Cold Weather Constraint is any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the following criteria.” Suggest changing the Technical Rationale to “A Generator Cold Weather Constraint is defined as “Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components.” The following criteria should be used in the development of Generator Cold Weather Constraints:”

The NERC process should add some clarifying language to line up with SGAS FAQ regarding use of Corrective Action Plans to cover multiple entities and locations within a single Corrective Action Plan even in cases where the entities are not in Coordinated Oversight.

Likes 0	
Dislikes 0	

Response

Hillary Creurer - Allete - Minnesota Power, Inc. - 1

Answer	
Document Name	

Comment	
Please see comments in questions above.	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	
Document Name	
Comment	

Reclamation recommends removing requirement R1.1 as the calculations being required by NERC/FERC do not provide a proper long-term analysis of the temperature conditions for industry. An “average” over 24 years does not properly reflect the extreme weather conditions that have been recorded in history.

Reclamation strongly recommends revising R1.2.2 in its entirety to:

- Ensure bullets are in an “OR” statement. It is misleading now which bullets are required to be met.
- Remove concurrent wind speed and precipitation, as this data is not tracked as detailed as weather temperatures and also does not affect equipment the same across industry, thus is subjective to interpretation. See previous comment on wind speed.
- Reword or provide guidance on “historical operating temperature at least one hour in duration”. Temperature tracking is performed hourly or daily, and not recorded by the minute, thus “at least one hour in duration” is misleading.
- Remove the bullet containing engineering analysis. This is not feasible to meet this requirement for existing sites as contracting an engineering firm for an analysis could take years. An engineering analysis could be performed on certain industries, but would be a no value added on others (hydropower).

Likes 0	
Dislikes 0	
Response	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	
Document Name	
Comment	

R8, new text includes an abbreviation “CEA”. Please spell out what the CEA is, we are assuming this is the Compliance Enforcement Agency, however it is not clear if this is indeed the intent of the language in the standard.

Likes 0	
Dislikes 0	

Response

Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers

Answer	
Document Name	

Comment

Ameren agrees with NAGF's comments.

Likes 0	
Dislikes 0	

Response

Jeffrey Streifling - NB Power Corporation - 1

Answer	
Document Name	

Comment

R2 High and Severe VSL: The Lower VSL and Moderate VSL’s text “The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) ….” Is not reflected in the R2 High and Severe VSL. For consistency throughout the R2 VSLs, we suggest adding “for its applicable unit(s)” before “meeting the criteria in R2 …”

E2 Lower VSL: we suggest removing “to implement appropriate freeze protection measures” from the E2 Lower VSL to ensure consistency with the wording of the Moderate, High and Severe VSLs.

NB Power supports Manitoba’s comment regarding the wording around extremely low ECWTs: “Some of our ECWT is below -40 degree C. In discussions with our design team, many components only have a rating down to -40 degrees C. There should be some wording around extremely low ECWTs where it is not readily available (or economically possible to pursue) the purchase of equipment with that low of a temperature rating. (To clarify: we are talking about ECWTs around -43 degrees C and ratings of -40 degrees C. We are not suggesting equipment ratings of -15 degrees C vs -43 degree ECWT).”

NB Power supports Manitoba Hydro’s comment : “For R3 Manitoba Hydro recommends instead of referencing the October 1, 2027 date in the Requirement remove the date in the Requirement and add the wording “date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction.”

NERC definition uses the concept of apparent cause(s), which is different from the Root Cause. Unless there is an obvious situation, the CAP resulting from the apparent cause(s) related to Generator Cold Weather Reliability Event, may require a longer time for implementation, however we can avoid rework and use instead the Root Cause Analysis, which is better suited for the CAP determination

Please clarify, in the case of the Canadian entities that routinely and for extensive durations are operating at temperatures close to their respective ECWT (i.e. -40◦C), through what meteorological phenomenon it is possible to have freezing precipitation (e.g., sleet, snow, ice, and freezing rain) at that ECWT (i.e. -40◦C) that could impact equipment within the Generator Owner's control. If rain will find it's way to an equipment operating at -40◦C will actually warm-up that equipment. Basically, there could be only a very low probability of exacerbating cooling effect, involving the latent heat related to energy involved in water phase changes. Water vapors would release latent heat of fusion in the atmosphere long before reaching the BES Generation Units equipment, and unless they aggregate into falling chunks of ice it would most likely not be the root cause of "Generator Cold Weather Reliability Event"

We propose that impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, should be excluded for equipment with ECWT of -10◦C or below.

Likes 0	
Dislikes 0	

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer	
Document Name	

Comment

The NAGF identified two issues that the SDT must address based on implementation issues seen with EOP-012-2. The first was related to freeze protection measures not associated with Generator Cold Weather Critical Components. The SDT addresses this issue in the revised standard and the NAGF thanks the SDT for that modification.

The second issue is related to the individual regions looking at the ECWT calculations differently, with different expectations related to the data used for determining the ECWT for a plant. While the SDT has significantly modified the document related to calculating the ECWT, and while the NAGF supports these modifications, nothing in this document addresses the unreasonable position that some regions are taking to require a temperature reading for every hour in order to make an ECWT valid. In the vast majority of cases, the GO is not in a position to have over 54,000 data points for any location, let alone every location. The GO in most cases must gather data from third party providers, and none of the data is perfect. This issue must be addressed through either Requirement R1 or modification to the ECWT definition. The NAGF looks forward to working with the SDT to address this identified concern.

Since the NAGF members likely have a great deal more experience making these calculations, determining issues with the data and addressing these issues, the NAGF recommends that time be spent by the SDT to first understand the issues and the impact to entities before rushing this standard through the process without addressing this concern.

Under R2, there is a great deal of confusion related to incorporating the 20 MPH wind speed into the ECWT calculation process. The NAGF is requesting that the SDT add language to the technical reference document explaining how Generator Owners should accommodate the wind speed into their design criteria.

The NAGF has several concerns with language in Attachment 1. These are identified below:

1. In the second bullet under pre-approved constraints, the NAGF recommends adding “or unlikely to provide sufficient impact on blade icing events”

2.Under section 3 of Case-by-case Determination, the majority of the identified issues will come down to cost. As currently structured, it is unclear how the CEA will ensure consistency between regions or even within a single region. More details must be provided in the attachment or proposed process document to allow the Generator Owners to understand what is expected of them.

3. Under Bullet 3.a, the word dispatchable should be removed. Based on the evaluations from NERC, the unplanned retirement of any generator will likely reduce the reliability of the grid since a new generator will not be available to replace it for several years.

4. The NAGF would like the SDT to provide justification for the three years used in bullet 3.b. Based on current industry trends; it is more likely that a new unit to replace generators retiring early will not be available for 5 to 7 years. The NAGF believes that three-year period is much shorter than reasonable.

5. Bullet 3.e. is duplicative of bullet 3.d.

6. The pre-approved cold weather constraints in Attachment 1 should be re-worded for consistency. Item 1 for example is, “Wind turbine towers that have structural limitations...,” so the last one should be, “Combustion turbine inlet air filters that are vulnerable to the buildup of frozen precipitation, such that applying heat upstream of inlet air filters would be required.”

7. The last of the pre-approved GCWCs should be expanded to cover CTGs that do have inlet air heating but would require upsizing to ride through worst-possible snowstorms without tripping or derating.

8. A pre-approved GCWC should be added for derates or being forced offline due to freezing of items not under the GO’s control, e.g. having to reduce load at a combined cycle plant under adverse wind direction conditions so that the cooling tower plume does not create hazardous icing on adjacent roadways.

Likes 0	
Dislikes 0	

Response

Robert Follini - Avista - Avista Corporation - 3

Answer	
Document Name	

Comment

R8, new text includes an abbreviation “CEA”. Please spell out what the CEA is, we are assuming this is the Compliance Enforcement Agency, however it is not clear if this is indeed the intent of the language in the standard.

Likes 0	
Dislikes 0	

Response

Ruchi Shah - AES - AES Corporation - 5

Answer	

Document Name	
Comment	
AES US Renewables strongly recommend the drafting team to develop further guidance on how to account both ECWT and 20mph wind speed for new generators (specifically for IBRs) as required in R2. Currently, the technical rationale does not provide much guidance on how determination can be made and our OEMs do not provide information concerning equipment's minimum operating temperature at certain wind speeds. Using wind chill temperature formula to determine what the minimum design temperature can be misleading. In fact, on the National Weather Service webpage, it specifically states that "wind chill temperature is how cold people and animals feel when outside". Additionally, we request that the drafting team provide guidance in the Technical Rationale concerning the need for Solar facilities to meet ECWT since the lowest temperatures normally occur during night time when Solar facilities are not generating. Should ECWT be calculated differently for Solar generators? We also recommend adding the flow chart that was provided during the 10/24/2024 webinar in the Technical Rationale. It is a good reference to include in the Technical Rationale.	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	
Document Name	
Comment	
Tri-State supports MRO NSRF Comments.	
Likes 0	
Dislikes 0	
Response	
Carver Powers - Utility Services, Inc. - 4	
Answer	
Document Name	
Comment	

1. There should be a process for Registered Entities to be able to submit consideration of additional constraints to be added to the EOP-012-3 Attachment 1 Pre-Approved Generator Cold Weather Constraints in the future after EOP-012-3 is approved by FERC.

2. What documentation will NERC require for submitting a constraint declaration? Suggest NERC develop a form and required evidence (e.g., photos, narrative, OEM pre-existing limitations, engineering analysis, etc.).

3. If the Regional Entities do not have the technical expertise to evaluate constraint declarations, and rely on third-party 'experts' this needs to be made transparent to the Registered Entities.

4. If a Registered Entity has previously received an approval of a Pre-Approved Generator Cold Weather Constraint (per Attachment 1 of EOP-012-3) due to one cold weather event, do they need to resubmit the constraint declaration for every similar cold weather event during that particular winter season that causes the same constraint? Suggest requiring constraint declarations of a similar nature just once per winter season.

5. Regarding the ECWT calculation, suggest adding guidance regarding combining data from different weather data resources, so that the frequency sampling is the same. For example, if one weather data source gathers temperature data three times per hour and another weather data source gathers weather data one time per hour, this will skew the 0.2 percentile in favor of the more frequent weather data source. Suggest adding guidance with a threshold such as at least 66% of the hours for each year from each weather data source must have hourly data.

Likes 0	
Dislikes 0	

Response

Martin Sidor - NRG - NRG Energy, Inc. - 6

Answer	
Document Name	

Comment

As suggested by NAGF, Under R2, there is a great deal of confusion related to incorporating the 20 MPH wind speed into the ECWT calculation process. The NAGF is requesting that the SDT add language to the technical reference document explaining how Generator Owners should accommodate the wind speed into their design criteria. Also, under section 3 of Case-by-case Determination, the majority of the identified issues will come down to cost. As currently structured, it is unclear how the CEA will ensure consistency between regions or even within a single region. More details must be provided in the attachment or proposed process document to allow the Generator Owners to understand what is expected of them.

Likes 0	
Dislikes 0	

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5

Answer	
Document Name	

Comment

As suggested by NAGF, Under R2, there is a great deal of confusion related to incorporating the 20 MPH wind speed into the ECWT calculation process. The NAGF is requesting that the SDT add language to the technical reference document explaining how Generator Owners should accommodate the wind speed into their design criteria. Also, Under section 3 of Case-by-case Determination, the majority of the identified issues will come down to cost. As currently structured, it is unclear how the CEA will ensure consistency between regions or even within a single region. More details must be provided in the attachment or proposed process document to allow the Generator Owners to understand what is expected of them.

Likes 0	
Dislikes 0	

Response

Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle

Answer	
Document Name	

Comment

PG&E supports NAGF concerns regarding ECWT calculation and the recommendation to provide clarification in incorporating wind speed into calculations in the technical reference document.

Likes 0	
Dislikes 0	

Response

Chantal Mazza - Chantal Mazza On Behalf of: Junji Yamaguchi, Hydro-Quebec (HQ), 1, 5; Nicolas Turcotte, Hydro-Quebec (HQ), 1, 5; - Chantal Mazza

Answer	
Document Name	

Comment

R2 High and Severe VSL: The Lower VSL and Moderate VSL's text "The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) …." Is not reflected in the R2 High and Severe VSL. For consistency throughout the R2 VSLs, we suggest adding "for its applicable unit(s)" before "meeting the criteria in R2 …"

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HQ supports Manitoba's comment regarding the wording around extremely low ECWTs: "Some of our ECWT is below -40 degree C. In discussions with our design team, many components only have a rating down to -40 degrees C. There should be some wording around extremely low ECWTs where it is not readily available (or economically possible to pursue) the purchase of equipment with that low of a temperature rating. (To clarify: we are talking about ECWTs around -43 degrees C and ratings of -40 degrees C. We are not suggesting equipment ratings of -15 degrees C vs -43 degree ECWT)."

HQ supports Manitoba Hydro's comment : "For R3 Manitoba Hydro recommends instead of referencing the October 1, 2027 date in the Requirement remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction."	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	
Document Name	
Comment	
Black Hills Corporation supports the comments submitted by NAGF.	
Likes 0	
Dislikes 0	
Response	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	

Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) and the North American Generator Forum (NAGF) on question 10	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	
Document Name	
Comment	
Duke Energy believes guidance should be provided on the process to retire declarations that have a resolution and declarations that are no longer required. EOP-012-3 as currently written provides no details on the method of retirement and does not provide a timeframe for the implementation of actions to address the declaration. In Attachment 1, item 3, Duke Energy suggest additional criteria be provided. Duke Energy suggest the SDT clarify if declarations created under EOP-012-2 need to be transitioned to meet the requirements of EOP-012-3. If a transition is required, please provide expectations on performing the transitions and the timetable for performing these activities.	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	
Document Name	
Comment	
Some of our ECWT is below -40 degree C. In discussions with our design team, some components only have a rating down to -40 degrees C. There should be some wording around extremely low ECWTs where it is not readily available (or economically possible to pursue) the purchase of equipment with that low of a temperature rating. (To clarify: we are talking about ECWTs around -43 degrees C and ratings of -40 degrees C. We are not suggesting equipment ratings of -15 degrees C vs -43 degree ECWT).	
Likes 0	
Dislikes 0	
Response	

Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	
Document Name	
Comment	
TVA committed to an implementation date for EOP-012-2 on 10/01/2024. This commitment required site procedure revisions, updated training, and numerous stakeholder reviews. It is recommended to go through at least one, suggest two, cold weather periods to address lessons learned prior to revising EOP-012-2. Implementation should be pushed to March 2026.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	
Document Name	
Comment	
No additional comments	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	
Document Name	
Comment	
1. BC Hydro requests that the Technical Rationale documented by the 2021-07 Drafting Team be consolidated with the Technical Rationale developed under this 2024-03 project under a single document for consistency and easy reference. 2. BC Hydro recommend that the draft standard be reviewed for consistent use of timelines, e.g. days/months vs. calendar days/months. 3. The Requirement R8 Part 8.4 wording is ambiguous “If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with the timetables in Requirement R6 Part 6.1 or Requirement R7 Part 7.1, to begin from the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid”. Would an entity interpret this as the Corrective Action Plan(s) need to be updated within six months for R7 (per R1.1.1) or be updated within 150 days for R6 (per R6) as applicable? 4. The Generator Cold Weather CAP Extension and Constraint Process is a standalone document, which therefore may not be enforceable. As this document sets timeline expectations for CAP extensions, including for CEA, that are either not in the Requirements and/or impact the	

Requirements, there could be situations where if the CEA exceeds the 45-day expectation to approve an extension, the submitting GO would be in potential noncompliance to EOP-012-3. Examples include requiring an entity to submit extension requests within 60 days prior to the original CAP completion date. The actual Requirements R6 and R7 don't include timelines for submitting extension requests. Therefore, an entity could submit the extension request at any time up to the completion date and still be in compliance. BC Hydro recommends revising the process and Requirements and including any timelines in the Requirements if the entity will be expected to meet them. As well, in Step 3 of the process, the CEA could take up to 45 days to approve (or more) and therefore the entity could be past the originally proposed completion date with no approved extension request. Step 3 also says "If an extension request is denied, the selected actions in the Corrective Action Plan need to be completed in accordance with the original timetables". However, the entity may be well beyond the original timelines if the review takes more than 45 days and therefore not able to meet the original timetables. As there is no maximum time for the CEA to review and this may lead to very long review times, this will be challenging for an entity. BC Hydro recommends there be an "approval by default" if the CEA does not respond within a given period after entity's submittal to CEA.

5. BC Hydro suggests that, similar to the pre-approved Generator Cold Weather Constraints in Attachment 1, it would be helpful to also include pre-approved circumstances deemed acceptable as beyond the Generator Owner control for CAP extensions.
6. Requirements R2, R6 and R7 reference "documentation of a declaration" of an identified Generator Cold Weather Constraint in accordance with R8. Should these requirements reference the Attachment 1 instead?

Likes 0	
Dislikes 0	

Response

Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group

Answer	
Document Name	2024-03_Unofficial_Comment_Form_EOP-012-3_NSRF_20241030.docx

Comment

MRO NSRF recommends that the standard drafting team ensure that any dates for which a registered entity is to be held to be in the requirement language and not a document that exists outside the structure of NERC Reliability Standards.

Likes 0	
Dislikes 0	

Response

Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5

Answer	
Document Name	

Comment

The values for wind speed and duration of ECWT that are used in R2 could be more tailored to each GO location. The guidance provided by NERC on how to calculate the ECWT (2021-07 Calculating Extreme Cold Weather Temperature_082022.pdf) was very helpful, and the fact that it used statistical analysis of real-world data seem to be a good compromise between reliability and cost.

The same approach should be used to calculate the wind speed and duration of ECWT that should be used as the design criteria for new units. Otherwise, new units could be designed with overly conservative ECWT, which could lead to increased cost of construction, and ongoing O&M costs. Additionally, if a GO is in a windier than average area of the U.S., the 20-mph wind speed may not be an accurate representation of the winds they may experience during the ECWT event.

Likes 0	
Dislikes 0	

Response

Thomas Foltz - AEP - 5

Answer	
Document Name	

Comment

The obligation in R6.1.6 states the CAP needs to include a timetable for implementing freeze protection measure to “similar” generating units owned by the Generator Owner. It is unclear how the term “similar” is to be applied, as some Generator Operators operate in a large footprint. Does the term “similar” refer to the generating unit design, the generating unit’s geographical location, or perhaps even both? Likewise, “similar equipment freeze protection measures” is problematic, because the word “similar” could be understood as being tied to either the equipment or the measures. Rather than stating “A review of applicability to similar equipment freeze protection measures”, AEP recommends instead using “A review of the freeze protection measures used for similar critical components.”

The R6.1.6 obligation to perform “A review of applicability to similar equipment freeze protection measures at generating units owned by the Generator Owner” needs further clarification. A Generator Cold Weather Reliability Event may be the result of either a failed equipment freeze protection measure or due to inadequate freeze protection measures. The obligation to perform an applicability review should only be required due to a Generator Cold Weather Reliability Event resulting from inadequate freeze protection measures.

Likes 0	
Dislikes 0	

Response

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Comments

Project Name:	2024-03 Revisions to EOP-012-2 | Draft 1
Comment Period Start Date:	10/17/2024
Comment Period End Date:	11/5/2024
Associated Ballot(s):	2024-03 Revisions to EOP-012-2 | Draft 1 EOP-012-3 IN 1 ST 2024-03 Revisions to EOP-012-2 | Draft 1 Implementation Plan IN 1 OT

There were 60 sets of responses, including comments from approximately 165 different people from approximately 109 companies representing 10 of the Industry Segments as shown in the table on the following pages.

All comments submitted can be reviewed in their original format on the project page.

If you feel that your comment has been overlooked, let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, contact Director, Standards Development Jamie Calderon (via email) or at (404) 446-9647.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Questions

1. In paragraph 47 of the June 2024 Order, FERC directed NERC to revise EOP-012-2 to "ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them." In paragraph 47 of the June 2024 Order, FERC directed NERC to develop and submit modifications to the Generator Cold Weather Constraint definition of Reliability Standard EOP-012-2, to remove the references to "cost," "reasonable cost," "unreasonable cost," and "good business practices" and replace them with criteria that are objective, unambiguous, and auditable. In paragraph 54 of the June 2024 Order, FERC directs NERC to modify EOP-012-2 so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner. In paragraph 94 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R8, Part 8.1 of Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations (more than every five years) to verify that the declaration remains valid.

The drafting team has done the following to address the FERC directives:

1. Provided an updated definition of Generator Cold Weather Constraint

2. Updated language within Requirement R8

3. Provided EOP-012-3 Attachment 1 for clarity on expectations for registered entities

Do you agree with the approach and associated language the drafting team chose to meet the directives? Please provide any additional comments to consider. If you do not agree but believe the directives can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

2. In paragraph 68 of the June 2024 Order, FERC directed NERC to modify Requirement R7 of EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. FERC provided an example for how to address this directive, such as to require shorter timeframes for those units that have experienced issues and allow longer timeframes to address similar potential issues across a fleet for those units that have not experienced issues.

The drafting team modified Requirement R6 of EOP-012-2 to require a shorter deadline to implement corrective actions for those generating units that experience a Generator Cold Weather Reliability Event. Do you agree with the revised timelines? Please provide any additional comments to consider. If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team. Please review the posted draft ERO Enterprise document, EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process.

3. In paragraph 70 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC.

The drafting team provided language changes in Requirements R6 and R7 for a Corrective Action Plan extension process. Do you believe that the proposed language changes meet the intent of paragraph 70 of the FERC Order? Please provide any additional comments to consider. If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

4. In paragraph 72 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to clarify that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

The drafting team provided updated language in Requirement R2 Part 2.1 to address the issue of units in different stages of design and construction. February 16, 2023 was chosen as a date of demarcation as that was the date the Extreme Cold Weather Temperature was approved by FERC. Do you agree that revisions to Requirement R2 Part 2.1 address this directive? If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

5. In paragraph 72 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to clarify that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

The drafting team provided updated language in Requirement R2 Part 2.2 to address the issue of units in newer stages of design and construction. February 16, 2023 was chosen as a date of demarcation as that was the date the Extreme Cold Weather Temperature was approved by FERC. Units committed to design criteria on or after February 16, 2023 do not have the option to utilize a Corrective Action Plan but may still declare a Generator Cold Weather Constraint. Do you agree that revisions to Requirement R2 Part 2.2 address this directive? If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

6. In paragraph 76 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to address certain ambiguities by expanding on Requirement R7.1.1 and 7.1.2 to make it clear which corrective action plan implementation deadline applies when a generator owner must implement both remedying issues with existing and installing new freeze protection measures.

The drafting team clarified Requirement R7 for Corrective Action Plans developed in accordance with Requirements R1, R2, or R3. Do you agree that revisions to Requirement R7 address this directive to differentiate between the existing and new freeze protection measures? If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

7. The drafting team provided language in the Implementation Plan to address parts 3 through 5 of paragraph 4 of the June 2024 Order addressing FERC's concerns regarding urgency. The Standard language updates were written to meet the core directives in an effective and efficient manner while providing language that is objective, unambiguous, and auditable. With EOP-012-2 already effective October 1, 2024 (with the exception of Requirement R3), the changes made were intended to meet the FERC Directives without adding significantly to the efforts already in progress. Do you agree that the associated Implementation Plan meets the Directives? If you do not agree but believe the Directives can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

8. Do you agree with the Implementation Plan for EOP-012-3? If you do not agree, please propose an alternate implementation plan with a detailed explanation.

9. Do you agree that EOP-012-3 is cost effective to address the Directives in the FERC Order? If you do not agree, or if you agree but have suggestions for improvement to enable more cost-effective approaches, please provide your recommendation and, if appropriate, technical, or procedural justification.

10. Please provide any additional comments for the standard drafting team to consider, if desired.

The Industry Segments are:

1 — Transmission Owners
2 — RTOs, ISOs
3 — Load-serving Entities
4 — Transmission-dependent Utilities
5 — Electric Generators
6 — Electricity Brokers, Aggregators, and Marketers
7 — Large Electricity End Users
8 — Small Electricity End Users
9 — Federal, State, Provincial Regulatory or other Government Entities
10 — Regional Reliability Organizations, Regional Entities

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
BC Hydro and Power Authority	Adrian Andreoiu	1	WECC	BC Hydro	Hootan Jarollahi	BC Hydro and Power Authority	3	WECC
					Helen Hamilton Harding	BC Hydro and Power Authority	5	WECC
					Adrian Andreoiu	BC Hydro and Power Authority	1	WECC
MRO	Anna Martinson	1,2,3,4,5,6	MRO	MRO Group	Shonda McCain	Omaha Public Power District (OPPD)	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					Jamison Cawley	Nebraska Public Power District	1,3,5	MRO
					Jay Sethi	Manitoba Hydro (MH)	1,3,5,6	MRO
					Husam Al-Hadidi	Manitoba Hydro (System PreformancePerformance)	1,3,5,6	MRO
					Kimberly Bentley	Western Area Power Adminstration	1,6	MRO
					Jaimin Patal	Saskatchewan Power Coporation (SPC)	1	MRO
					George Brown	Pattern Operators LP	5	MRO

					Larry Heckert	Alliant Energy (ALTE)	4	MRO
					Terry Harbour	MidAmerican Energy Company (MEC)	1,3	MRO
					Dane Rogers	Oklahoma Gas and Electric (OG&E)	1,3,5,6	MRO
					Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO
					Michael Ayotte	ITC Holdings	1	MRO
					Andrew Coffelt	Board of Public Utilities-Kansas (BPU)	1,3,5,6	MRO
					Peter Brown	Invenergy	5,6	MRO
					Angela Wheat	Southwestern Power Administration	1	MRO
					Joshua Phillips	Southwest Power Pool	2	MRO
					Patrick Tuttle	Oklahoma Municipal Power Authority	4,5	MRO
Santee Cooper	Carey Salisbury	5		Santee Cooper	Paul Camilletti	Santee Cooper	1,3,5,6	SERC
					Kevin Baker	Santee Cooper	1,3,5,6	SERC
WEC Energy Group, Inc.	Christine Kane	3		WEC Energy Group	Christine Kane	WEC Energy Group, Inc.	3	RF
					Michelle Hribar	WEC Energy Group, Inc.	5	RF

					David Boeshaar	WEC Energy Group, Inc.	6	RF
					Candace Morakinyo	WEC Energy Group, Inc.	4	RF
ACES Power Marketing	Jodirah Green	1,3,4,5,6	MRO,NPCC,RF,SERC,Texas RE,WECC	ACES Collaborators	Bob Soloman	Hoosier Energy Electric Cooperative	1	RF
					Kevin Lyons	Central Iowa Power Cooperative	1	MRO
					Jason Procuniar	Buckeye Power, Inc.	4	RF
					Kris Carper	Arizona Electric Power Cooperative, Inc.	1	WECC
					Scott Brame	North Carolina Electric Membership Corporation	3,4,5	SERC
					Bill Pezalla	Old Dominion Electric Cooperative	3,4	SERC
					Nick Fogleman	Prairie Power, Inc.	1,3	SERC
					Jordan Mcclellan	Southern Illinois Power Cooperative	1	SERC
Eversource Energy	Joshua London	1		Eversource	Joshua London	Eversource Energy	1	NPCC
					Vicki O'Leary	Eversource Energy	3	NPCC
Entergy	Julie Hall	6		Entergy	Oliver Burke	Entergy - Entergy Services, Inc.	1	SERC

					Jamie Prater	Entergy	5	SERC
Electric Reliability Council of Texas, Inc.	Kennedy Meier	2		ISO/RTO Council Standards Review Committee (SRC)	Kennedy Meier	Electric Reliability Council of Texas, Inc.	2	Texas RE
					Joshua Phillips	Southwest Power Pool, Inc. (RTO)	2	MRO
					Helen Lainis	Independent Electricity System Operator	2	NPCC
					Kirsten Rowley	Midcontinent ISO, Inc.	2	RF
					Gregory Campoli	New York Independent System Operator	2	NPCC
					Thomas Foster	PJM Interconnection, L.L.C.	2	RF
					Darcy O'Connell	California ISO	2	WECC
					John Pearson	ISO New England, Inc.	2	NPCC
FirstEnergy - FirstEnergy Corporation	Mark Garza	4		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF
					Robert Loy	FirstEnergy - FirstEnergy Solutions	5	RF
					Mark Garza	FirstEnergy-FirstEnergy	1,3,4,5,6	RF

					Stacey Sheehan	FirstEnergy - FirstEnergy Corporation	6	RF
DTE Energy - Detroit Edison Company	Mohamad Elhusseini	5		DTE Energy	Mohamad Elhusseini	DTE Energy	5	RF
					Patricia Ireland	DTE Energy	4	RF
					Marvin Johnson	DTE Energy - Detroit Edison Company	3	RF
Southern Company - Southern Company Services, Inc.	Pamela Hunter	1,3,5,6	SERC	Southern Company	Matt Carden	Southern Company - Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
					Leslie Burke	Southern Company - Southern Company Generation	5	SERC
Black Hills Corporation	Rachel Schuldt	6		Black Hills Corporation - All Segments	Travis Grablander	Black Hills Corporation	1	WECC
					Josh Combs	Black Hills Corporation	3	WECC
					Rachel Schuldt	Black Hills Corporation	6	WECC
					Carly Miller	Black Hills Corporation	5	WECC
					Sheila Suurmeier	Black Hills Corporation	5	WECC

Northeast Power Coordinating Council	Ruida Shu	1,2,3,4,5,6,7,8,9,10	NPCC	NPCC RSC	Gerry Dunbar	Northeast Power Coordinating Council	10	NPCC
					Deidre Altobell	Con Edison	1	NPCC
					Michele Tondalo	United Illuminating Co.	1	NPCC
					Stephanie Ullah-Mazzuca	Orange and Rockland	1	NPCC
					Michael Ridolfino	Central Hudson Gas & Electric Corp.	1	NPCC
					Randy Buswell	Vermont Electric Power Company	1	NPCC
					James Grant	NYISO	2	NPCC
					Dermot Smyth	Con Ed - Consolidated Edison Co. of New York	1	NPCC
					David Burke	Orange and Rockland	3	NPCC
					Peter Yost	Con Ed - Consolidated Edison Co. of New York	3	NPCC
					Salvatore Spagnolo	New York Power Authority	1	NPCC
					Sean Bodkin	Dominion - Dominion Resources, Inc.	6	NPCC
					Silvia Mitchell	NextEra Energy - Florida Power and Light Co.	1	NPCC

Sean Cavote	PSEG	4	NPCC
Jason Chandler	Con Edison	5	NPCC
Tracy MacNicoll	Utility Services	5	NPCC
Shivaz Chopra	New York Power Authority	6	NPCC
Vijay Puran	New York State Department of Public Service	6	NPCC
David Kiguel	Independent	7	NPCC
Joel Charlebois	AESI	7	NPCC
Joshua London	Eversource Energy	1	NPCC
Jeffrey Streifling	NB Power Corporation	1,4,10	NPCC
Joel Charlebois	AESI	7	NPCC
John Hastings	National Grid	1	NPCC
Erin Wilson	NB Power	1	NPCC
James Grant	NYISO	2	NPCC

					Michael Couchesne	ISO-NE	2	NPCC
					Kurtis Chong	IESO	2	NPCC
					Michele Pagano	Con Edison	4	NPCC
					Bendong Sun	Bruce Power	4	NPCC
					Carvers Powers	Utility Services	5	NPCC
					Wes Yeomans	NYSRC	7	NPCC
Dominion - Dominion Resources, Inc.	Sean Bodkin	6		Dominion	Victoria Crider	Dominion Energy	3	NA - Not Applicable
					Sean Bodkin	Dominion Energy	6	NA - Not Applicable
					Steven Belle	Dominion Energy	1	NA - Not Applicable
					Barbara Marion	Dominion Energy	5	NA - Not Applicable
Western Electricity Coordinating Council	Steven Rueckert	10		WECC Entity Monitoring	Steve Rueckert	WECC	10	WECC
					Curtis Crews	WECC	10	WECC

Tim Kelley	Tim Kelley		WECC	SMUD and BANC	Nicole Looney	Sacramento Municipal Utility District	3	WECC
					Charles Norton	Sacramento Municipal Utility District	6	WECC
					Wei Shao	Sacramento Municipal Utility District	1	WECC
					Foung Mua	Sacramento Municipal Utility District	4	WECC
					Nicole Goi	Sacramento Municipal Utility District	5	WECC
					Kevin Smith	Balancing Authority of Northern California	1	WECC

1. In paragraph 47 of the June 2024 Order, FERC directed NERC to revise EOP-012-2 to "ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them." In paragraph 47 of the June 2024 Order, FERC directed NERC to develop and submit modifications to the Generator Cold Weather Constraint definition of Reliability Standard EOP-012-2, to remove the references to "cost," "reasonable cost," "unreasonable cost," and "good business practices" and replace them with criteria that are objective, unambiguous, and auditable. In paragraph 54 of the June 2024 Order, FERC directs NERC to modify EOP-012-2 so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner. In paragraph 94 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R8, Part 8.1 of Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations (more than every five years) to verify that the declaration remains valid.

The drafting team has done the following to address the FERC directives:

1. Provided an updated definition of Generator Cold Weather Constraint

2. Updated language within Requirement R8

3. Provided EOP-012-3 Attachment 1 for clarity on expectations for registered entities

Do you agree with the approach and associated language the drafting team chose to meet the directives? Please provide any additional comments to consider. If you do not agree but believe the directives can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	
MRO NSRF recommends there be an "approval by default" if the CEA does not respond within a given period, for example 30 days after submittal to CEA.	
Likes 1	JEA, 1, McClung Joseph

Dislikes 0	
Response	
Thank you for your comment. The Drafting Team appreciates the constructive feedback and has modified the standard to improve clarity. The “approval by default” approach does not meet the FERC directive for NERC to receive, review, evaluate and confirm the validity of a Generator Cold Weather Constraint.	
Joshua London - Eversource Energy - 1, Group Name Eversource	
Answer	No
Document Name	
Comment	
Eversource supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team appreciates the constructive input, particularly as it relates to the Generator Cold Weather Constraint definition and has modified the standard language to improve clarity.	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	
R8.2 should be its own requirement. R8.4 timing is too restrictive. Suggest adding a statement with a timeframe (150 days). A CEA rejection of a CAP could force an unplanned maintenance outage and be longer than expected timeframes.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment. The Drafting Team appreciates the constructive feedback and has modified the standard to improve clarity.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Manitoba Hydro supports BC Hydro's comment: "BC Hydro is supportive of the revisions to the revised Generator Cold Weather Constraint definition. However, to add clarity on Freeze Protection Measures, BC Hydro recommends retaining the following wording "Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions" in EOP-012-3 associated documentation, such as the Technical Rationale." And "Please also clarify in the language of the Requirement whether these are calendar or business days."	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team appreciates the constructive input and has considered these suggestions in the modified the standard language.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
Duke Energy agrees with and supports NAGF's position on modifications to the wording of R8 and their stance on the lack of CEA obligations related to the approval process.	

Duke Energy agrees in general with changes to the definition of a Generator Cold Weather Constraint and the use of Attachment 1. Attachment 1 does not though provide sufficient guidance for freeze protection modifications that are unsustainable due to cost. While Attachment Sections 3a through 3c does offer guidance, it provides no guidance for modifications that are financially unfeasible. Please provide additional guidance regarding unsustainability due to cost. Duke Energy does not support the pre-approval requirement for declarations. The declaration process should be driven by clear criteria and the acceptability of declarations should be evaluated as part of the audit process. Please provide clear guidance and criteria for declarations as stated. The status of the CEA in the declaration process is an area of concern. The CEA by statute, perform the enforcement role for standards published by NERC. The preapproval process places the CEA in the position of a performer or approver on implementation of the standard. The SDT should modify the process to reflect a more amiable solution that excludes the CEA.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The Drafting Team appreciates the constructive feedback and language recommendations, particularly those related to the declarationdeclaration of Generator Cold Weather Constraints. The Drafting Team has made several modifications to the standard to improve the clarity of the requirements.

Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	No
Document Name	

Comment
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI), the Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF), and the North American Generator Forum (NAGF) on question 1

Likes 0	
Dislikes 0	

Response	
Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity.	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation supports the comments submitted by NAGF and EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	No
Document Name	
Comment	
TEPC agrees with EEI's comments and criteria used to determine a Generator Cold Weather Constraint. *The definition for Generator Cold Weather Constraints contained in the previous version provided the industry with useful criteria that has been lost in the revised version.*	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments. The Drafting Team appreciates the constructive input, particularly as it relates to the Generator Cold Weather Constraint definition and has modified the standard language to improve clarity.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team appreciates the constructive input and has modified the standard language to improve clarity.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	
Comment	
Dominion Energy supports EEI comments.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. The Drafting Team appreciates the constructive input and has modified the standard language to improve clarity.	
Chantal Mazza - Chantal Mazza On Behalf of: Junji Yamaguchi, Hydro-Quebec (HQ), 1, 5; Nicolas Turcotte, Hydro-Quebec (HQ), 1, 5; - Chantal Mazza	
Answer	No
Document Name	
Comment	

HQ supports BC Hydro's comment: "BC Hydro is supportive of the revisions to the revised Generator Cold Weather Constraint definition. However, to add clarity on Freeze Protection Measures, BC Hydro recommends retaining the following wording "Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions" in EOP-012-3 associated documentation, such as the Technical Rationale." And "Please also clarify in the language of the Requirement whether these are calendar or business days.".

HQ supports NBPower's comment: "The pre-approved Generator Cold Weather Constraints (GCWCs) in Attachment 1 could be problematic in some jurisdictions, since Requirement R8 and Attachment 1 are referenced for Requirement R2 Part 2.2 for new designs on a go-forward basis. In particular, the pre-approved GCWC should not be set up in such a way as to exempt generating unit developers from doing proper due diligence. At least for future designs (Requirement R2 Part 2.2) all Generator Cold Weather Constraints should be assessed on a case-by-case basis. Pre-approved GCWCs should be avoided, or if used at all, limited to existing or already committed designs, since technology and the needs of the grid may be expected to change in the future and existing pre-approvals may no longer be appropriate."

HQ supports OPG's comments "Additional clarification is required regarding GCWC CEA applicability/validity confirmation & determination implications for unit present/future operation.

Please clarify the role of CEA – review for constraint presence, validity confirmation, or approval, and the requirements the CEA need to satisfy to perform its role.

Attachment 1 bullet #3 appears to be the BA purview and not the CEA.

In the context of this standard a freeze protection measure can negatively impact the revenue of a market participant, yet still be required to be implemented for compliance purposes. Please explain how was derived the “more than three percent” criterion and the justification for argument that it will fit all the market participants, from any geographical location. Attachment 1 last paragraph state that “An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.”. The overall intent of the Extreme Cold Weather Preparedness and Operations standard is to:” Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature;” By definition, the “**Generator Cold Weather Constraint** – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components.”. As written, this appears to be an actual requirement to operate at the ECWT, which cannot be reconciled with an approved Generator Cold Weather Constraint declaration.” There is a risk for future generation designs introduced by Attachment 1 via geographical limitation for specific technologies in the Pre-Approved Generator Cold Weather Constraints list.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team appreciates the constructive input, particularly as it relates to the Generator Cold Weather Constraint definition and has modified the standard language to improve clarity.	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	No
Document Name	
Comment	
PG&E Supports NAGF recommended modifications to the drafted R8 language.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	No
Document Name	
Comment	
NRG is in concurrence that the direction that the SDT has taken to address the ambiguity of the language of the constraints is sound as it has allowed for acceptance of known technical constraints that the industry has identified. It also has provided sound examples of those examples that may be presented on case by case basis. However, strict guidance should be provided to reviewers to ensure consistency of acceptance of these constraints for the case by case basis. The process may also need to be modified that if an Extreme Cold Weather Reliability event continually occurs due to same mechanism-say wind turbine blade icing or PV icing- that a single declaration for the year should suffice and not required for each event and filed through the required approval process.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	No
Document Name	
Comment	

NRG is in concurrence that the direction that the SDT has taken to address the ambiguity of the language of the constraints is sound as it has allowed for acceptance of known technical constraints that the industry has identified. It also has provided sound examples of those examples that may be presented on case by case basis. However, strict guidance should be provided to reviewers to ensure consistency of acceptance of these constraints for the case by case basis. The process may also need to be modified that if an Extreme Cold Weather Reliability event continually occurs due to same mechanism-say wind turbine blade icing or PV icing- that a single declaration for the year should suffice and not be required for each event and filed through the required approval process.

Likes 0	
Dislikes 0	

Response
Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity.

Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	No
Document Name	

Comment
Tri-State supports MRO NSRF Comment.

Likes 0	
Dislikes 0	

Response
Thank you for your comment.

Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	

Comment
While AES US Renewables agrees with the approach of updating definition of Generator Cold Weather Constraint, we believe there are still some gaps in the proposed R8 as well as Attachment 1 that need to be addressed: • The 24 calendar month timeline for reviewing GCWC declaration that has been validated by CEA is too frequent. We believe that at a minimum, it should be set to 36 calendar months. We prefer 60 months if possible since a lot of the pre-approved constraints listed in Attachment 1 for renewable generators are likely not going to be alleviated anytime soon as OEMs are not actively working to address them (unlike the IEEE 2800 requirements where various ISO/RTOs are driving the change requirements due to being perceived as more impactful and urgent). o It was mentioned during the 10/24/2024 webinar that 24-calendar month reviews do not require submittal to CEA for reviews and approvals. However, it is currently not clear on what the process entails when a constraint declaration is no longer valid. Is the GO required to notify the CEA that the constraint declaration that was approved is no longer valid due to solutions being available to mitigate the constraint? Since the Constraint and CAP Process document stated that NERC will be sending NERC a quarterly report, we are assuming that NERC/CEA will have to keep track of retirement of constraint declarations in addition to what they have approved/denied. • Neither R8 nor Attachment 1 addresses the timeline for implementing the mitigation if the declared constraint is no longer valid. We have concerns about situations where one vendor or OEM has developed a solution for the constraint, but the amount of investment needed to incorporate that solution is too high and impacts revenue and profitability negatively in operating the generation facility. How will this type of scenario be taken into account under the proposed Attachment 1 criteria? • Will the pre-approved list in Attachment 1 be revised if new constraints are identified in the future? Or if commercially viable solutions to those constraints appear in the future, will those constraints be removed from the pre-approved list? We are concerned about the static nature of the pre-approved list as it can greatly impact the ability to declare constraints for projects that are in the interconnection queue at various ISO/RTOs currently. • In the Constraint and CAP Process document provided along with EOP-012-3 proposed draft and Implementation Plan, there is no mention on what registered entities can do if their constraint declaration is denied related to R2.2. The current language only focused on updating CAPs related to R6.1 and R7.1. As written currently, R2.2 does not have the option to create a corrective action plan. • Under the proposed Attachment 1, item 3 (c) allows constraint declaration if application of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit. We would like to find out if further guidance can be provided either in Attachment 1 or Technical Rationale for this constraint criteria in regards toin regard to

financial/cost impacts. This question was posed during the 10/24/2024 webinar and the answer provided was not clear and it was suggested that it can be evaluated on a case-by-case basis.

- More clarification is needed on a few constraints listed under Attachment 1:
- "*Wind turbine towers that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1.*"
- Does structural limitations imply design limitations? Please clarify that or include clarification in the Technical Rationale document.
- "*Heat tracing or other de-icing technologies for wind turbine blades that are not available in the Generator Owner's location.*"
- Does the phrase "not available" also mean not effective? There is a difference between both. There are currently some not-so-effective methods to prevent icing (like spraying the blades with anti-icing coatings). Are Generator Owners required to use solutions that are not effective or can it be part of constraint declaration?
- Does the phrase "Generator Owner's location" mean regionally? For example, does it mean if a wind turbine uses a solution that is available in New York, and the solution is not used in Texas, the Generator Owner can declare constraint that it is not available for wind turbines in Texas? Or should the constraint be modified to: "*Heat tracing or other de-icing technologies for wind turbine blades that are not available in* ***all NERC regions***"? Our rationale is that if it is not available in the US, but available in Europe, then, we are allowed to declare constraint. It should be based on availability within each country.

Likes 0	
Dislikes 0	

Response

Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity.

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer	No
Document Name	

Comment

The NAGF recommends that R8 be modified to address the following issues:

a. Requirement 8.2 should not be part of R8 as it is a separate requirement and requires actions different than R8;

b. The language used in 8.4, specifically as it relates to R6, is not clear, or it may require an entity to have a CAP implemented on the day they are notified that the declaration has been rejected;

c.The time stated in 8.1 does not agree with the process document posted in support of the standard. In addition, the document requires an entity to coordinate with the CEA before filing a declaration, without any obligation on the CEA to respond in a timely manner. These two documents, the requirement in the standard and the process document, must be coordinated before Requirement R8 is clear, unambiguous and enforceable.

To address these issues, the NAGF recommends the following language be used:

R8. Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

8.1. Submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 days of determining that the Generator Cold Weather Constraint is applicable. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit the Generator Cold Weather Constraint declaration(s) no later than 15 days after commercial operation;

8.2 Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable; and

8.3 If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed;

8.3.1 Within 150 days or longer as agreed to by the CEA to meet compliance with R6 to begin the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid, or

8.3.2 Consistent with Requirement R7 Part 7.1 or longer as agreed to by the CEA, to begin from the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid.

R9. Review any Generator Cold Weather Constraint declaration validated by the CEA every 24 calendar months to determine if it remains valid under Attachment 1.

The NAGF has significant concerns related to the requirement to modify or repair equipment within an extremely confined period under these requirements. This issue is discussed in further detail under question 2.

The NAGF does not see any process that will be followed in the event the review of the declaration determines that it is now possible to correct, there are no timelines or other process. Is it the intent to allow the GO to determine when this will be implemented without any notifications to the CEA?

The NAGF also has concerns about situations where one vendor or OEM has developed a solution for the constraint, but the amount of investment needed to incorporate that solution is too high and impacts revenue and profitability negatively for operating the generation facility. How will this type of scenario be considered under the proposed Attachment 1 criteria?

The NAGF requests additional clarification regarding the constraints in Attachment 1:

As an example, for the constraint "Wind turbine towers that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1." Do structural limitations imply design limitations? Please clarify that or include clarification in the Technical Rationale document.

As another example for the constraint "Heat tracing or other de-icing technologies for wind turbine blades that are not available in the Generator Owner's location." Does the phrase "not available" also mean not effective? There is a difference between both. There are currently some not-so-effective methods to prevent icing (like spraying the blades with anti-icing coatings). Since cost is not to be considered, are Generator Owners required to use solutions that are not effective if they are available, or can it be part of constraint declaration?

Does the phrase "Generator Owner's location" mean regionally? For example, does it mean if a wind turbine uses a solution that is available in New York, and the solution is not used in Texas, the Generator Owner can declare a constraint that it is not available for wind turbines in Texas? Or should the constraint be modified to: "Heat tracing or other de-icing technologies for wind turbine blades that are not available in all NERC regions"? Our rationale is that if it is not available in the US, but available in Europe, then, we are allowed to declare constraint. It should be based on availability within each country.

The NAGF looks forward to working with the SDT to address these issues and concerns.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The Drafting Team appreciates the constructive feedback and language recommendations, particularly those related to R8. The Drafting Team has made several modifications to the standard to improve the clarity of the requirements.

Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	

While Avista supports in part the approach that the Drafting Team has taken to address FERC Commission Directives contained in the June 27, 2024 FERC Order, Approving Extreme Cold Weather Reliability Standard EOP-012-2 And Directing Modifications, we do not support the proposed definition for Generator Cold Weather Constraint. The definition for Generator Cold Weather Constraints contained in the previous version provided the industry with useful criteria that has been lost in the revised version. And while we see value in the information provided in Attachment 1, that information could be contained in another technical document supporting this standard (i.e., Technical Rationale or Implementation Guidance), if the definition and criteria were revised to more closely align to the directives contained in the Order. To address our concerns, we offer the following edits (in boldface) to the Generator Cold Weather Constraints definition:

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions. (*Strikethroughs have been omitted for clarity*)

Criteria used to determine a **Generator Cold Weather Constraint shall consider the following:**

{C}· **A determination through an engineering analysis that the freeze protection measures lack reasonable assurances of efficacy and there is no record that such protections have been effectively utilized on** generating units **of a** comparable types in regions that experience similar winter climate conditions;

{C}· **A determination through engineering analysis that there are no available freeze protection measures, commercially available, that have been proven to be effective at mitigating the effects of the Extreme Cold Weather Temperature identified in the region where the resource is installed**; or {C}· **A determination through an engineering economic analysis has been made that determines that the implementation of freeze protection measures necessary to mitigate the effects of the Extreme Cold Weather Temperature, while feasible, would result in the early retirement of the resource.**	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team appreciates the constructive input, particularly as it relates to the Generator Cold Weather Constraint definition and has modified the standard language to improve clarity.	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	No
Document Name	
Comment	
Ameren agrees with EEI's and NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI and NAGF.	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	No
Document Name	

Comment
NB Power supports BC Hydro's comment: "BC Hydro is supportive of the revisions to the revised Generator Cold Weather Constraint definition. However, to add clarity on Freeze Protection Measures, BC Hydro recommends retaining the following wording "Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions" in EOP-012-3 associated documentation, such as the Technical Rationale." And "Please also clarify in the language of the Requirement whether these are calendar or business days.". The pre-approved Generator Cold Weather Constraints (GCWCs) in Attachment 1 could be problematic in some jurisdictions, since Requirement R8 and Attachment 1 are referenced for Requirement R2 Part 2.2 for new designs on a go-forward basis. In particular, the pre-approved GCWC should not be set up in such a way as to exempt generating unit developers from doing proper due diligence. At least for future designs (Requirement R2 Part 2.2) all Generator Cold Weather Constraints should be assessed on a case-by-case basis. Pre-approved GCWCs should be avoided, or if used at all, limited to existing or already committed designs, since technology and the needs of the grid may be expected to change in the future and existing pre-approvals may no longer be appropriate. Additional clarification is required regarding GCWC CEA applicability/validity confirmation & determination implications for unit present/future operation. Please clarify the role of CEA – review for constraint presence, validity confirmation, or approval, and the requirements the CEA need to satisfy to perform its role. Attachment 1 bullet #3 appears to be the BA purview and not the CEA. In the context of this standard a freeze protection measure can negatively impact the revenue of a market participant, yet still be required to be implemented for compliance purposes. Please explain how was derived the "more than three percent" criterion and the justification for argument that it will fit all the market participants, from any geographical location. Attachment 1 last paragraph state that "An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.".

The overall intent of the Extreme Cold Weather Preparedness and Operations standard is to:" Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature;" By definition, the "**Generator Cold Weather Constraint** – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components.". As written, this appears to be an actual requirement to operate at the ECWT, which cannot be reconciled with an approved Generator Cold Weather Constraint declaration." There is a risk for future generation designs introduced by Attachment 1 via geographical limitation for specific technologies in the Pre-Approved Generator Cold Weather Constraints list.

Likes 0	
Dislikes 0	

Response
Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity.

Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	

Comment
While we support in part the approach that the Drafting Team has taken to address FERC Commission Directives contained in the June 27, 2024 FERC Order, Approving Extreme Cold Weather Reliability Standard EOP-012-2 And Directing Modifications, we do not support the proposed definition for Generator Cold Weather Constraint. The definition for Generator Cold Weather Constraints contained in the previous version provided the industry with useful criteria that has been lost in the revised version. And while we see value in the information provided in Attachment 1, that information could be contained in another technical document supporting this standard (i.e., Technical Rationale or Implementation Guidance), if the definition and criteria were revised to more closely align to the directives contained in the Order. To address our concerns, we offer the following edits (in boldface) to the Generator Cold Weather Constraints definition:

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions. (*Strikethroughs have been omitted for clarity*) Criteria used to determine a **Generator Cold Weather Constraint shall consider the following:** 1}· **A determination through an engineering analysis that the freeze protection measures lack reasonable assurances of efficacy and there is no record that such protections have been effectively utilized on** generating units **of a** comparable types in regions that experience similar winter climate conditions; 2}· **A determination through engineering analysis that there are no available freeze protection measures, commercially available, that have been proven to be effective at mitigating the effects of the Extreme Cold Weather Temperature identified in the region where the resource is installed**; or 3}· **A determination through an engineering economic analysis has been made that determines that the implementation of freeze protection measures necessary to mitigate the effects of the Extreme Cold Weather Temperature, while feasible, would result in the early retirement of the resource.**	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	

Comment
While EEI supports in part the approach that the DT has taken to address FERC Commission Directives contained in the June 27, 2024 FERC Order, Approving Extreme Cold Weather Reliability Standard EOP-012-2 And Directing Modifications, we do not support the proposed definition for Generator Cold Weather Constraint. The definition for Generator Cold Weather Constraints contained in the previous version provided the industry with useful criteria that has been lost in the revised version. And while we see value in the information provided in Attachment 1, that information could be contained in another technical document supporting this standard (i.e., Technical Rationale or Implementation Guidance), if the definition and criteria were revised to more closely align to the directives contained in the Order. To address our concerns, we offer the following edits (in boldface) to the Generator Cold Weather Constraints definition: **Generator Cold Weather Constraint –** Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions. Criteria used to determine a **Generator Cold Weather Constraint shall consider the following:** • **A determination through an engineering analysis that the freeze protection measures lack reasonable assurances of efficacy and there is no record that such protections have been effectively utilized on** generating units **of a** comparable types in regions that experience similar winter climate conditions; • **A determination through engineering analysis that there are no available freeze protection measures, commercially available, that have been proven to be effective at mitigating the effects of the Extreme Cold Weather Temperature identified in the region where the resource is installed**; or • **A determination through an engineering economic analysis has been made that determines that the implementation of freeze protection measures necessary to mitigate the effects of the Extreme Cold Weather Temperature, while feasible, would result in the early retirement of the resource.**
Likes 0	
Dislikes 0	
Response

Thank you for your comments. The Drafting Team appreciates the constructive input, particularly as it relates to the Generator Cold Weather Constraint definition and has modified the standard language to improve clarity.	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	
Comment	
Vistra agrees with comments made by Duke Energy.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to declarationDuke Energy. s	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Most of the definition on Page 2 of the redlined document removes Generator Cold Weather Constraint without directing to Attachment 1. Also, depending on the CEA, a constraint may be applicable to the facility but disagreed upon by the CEA, in which the facility would have to update its corrective action plan without being able to contest the analysis of the CEA. Recommend that any Constraint that is requested be handled by a single senior management official with overall authority and responsibility for leading and managing implementation of and continuing adherence to the requirements within the NERC EOP-012 cold weather standards and not at the Compliance Enforcement Authority (CEA).	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
MP agrees with several aspects of Attachment 1 but aligns more closely with the edits EEI provided for the Cold Weather Constraint definition. EEI refers to effective freeze protections on units of comparable types in regions with similar winter climate conditions, commercially available and effective freeze protection for the region, and evaluation of where freeze protection installation could force early retirement. Early retirement of units will not support overall grid reliability.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team appreciates the constructive input, particularly as it relates to the Generator Cold Weather Constraint definition and has modified the standard language to improve clarity.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	No
Document Name	
Comment	
The ISO/RTO Council (IRC) Standards Review Committee (SRC) (consisting, for purposes of these comments, of CAISO, ERCOT, IESO, ISO-NE, PJM, MISO, NYISO, and SPP) generally agrees with the updated definition of Generator Cold Weather Constraint, the updated language within Requirement R8, and the provision of Attachment 1 to provide further detail on constraints. However, the SRC recommends the following revisions to Attachment 1:	

-- Rename the first list of constraints “Potential Generator Cold Weather Constraints that Would be Candidates for Accelerated Approval” to better reflect the CEA review that is required for these constraints.

-- Revise the second constraint on the accelerated approval list to read as follows to clarify that it is not intended to address shipping difficulties: “Heat tracing or other de-icing technologies for wind turbine blades that the supplier will not sell or otherwise provide to the Generator Owner.”

-- Revise the fourth constraint on the accelerated approval list to read as follows to allow for the possibility of the future development of technically feasible solar panel de-icing technology: “Applying heat to remove accumulated frozen precipitation on solar panels when generating the heat would require 50% or more of the amount of energy the solar panels would produce in the absence of the accumulated frozen precipitation.”

The SRC recommends that items 3.a and 3.b of the case-by-case constraint list be consolidated into a single item that reads as follows: “The application of freeze protection measures would result in the imminent premature retirement of an existing generating unit.” This would help clarify that (for example) changing a unit’s planned retirement date from a day 20 years in the future to a day 19 years in the future does not justify a constraint, while also avoiding any potential ambiguity regarding what constitutes proper publication of a retirement date.

The SRC recommends that the three percent threshold used in items 3.d and 3.e of the case-by-case constraint list be replaced with language that would allow the CEA to determine the appropriate threshold for the particular region or portion of a region that would be impacted by the requested constraint. This would allow the CEA to consider whether, for example, a reduction in summer net dependable capacity is likely to have a more significant reliability impact the farther south a generating unit is located.

Regardless of the threshold that is ultimately selected, the SRC recommends that item 3.d be modified by adding language limiting item 3.d to performance reductions that occur “during weather conditions other than extreme cold weather conditions.” This would help clarify that no constraint exists if a freeze protection measure would cause a performance reduction only during extreme cold weather conditions.

The SRC recommends that the last paragraph in Attachment 1 be revised to read as follows to clarify that the relevant Reliability Coordinator or Balancing Authority may provide information that would assist the CEA in evaluating certain types of constraints and to clarify that a valid constraint declaration does not necessarily carry any weight for purposes of any non-EOP-012 regulatory regimes that may apply to the unit in question:

When submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply. ***If a Generator Cold Weather Constraint declaration indicates that the application of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk-Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s), the documentation that defends and supports the constraint should include any assessment that the applicable Balancing Authority or Reliability Coordinator might agree to provide concerning the impact to the reliability of the Bulk-Power System if the constraint were to be granted.*** An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3***, and does not in any way purport to relieve the Generator Owner of any other legal obligations or requirements outside of the requirements of EOP-012-3, including tariff, regulatory, or statutory obligations or requirements***.

The SRC also recommends that Part 8.1 of Requirement R8 be revised to require units beginning commercial operations to submit constraint declarations on or before the commercial operation date rather than 15 days after commercial operation. This would help minimize the amount of time between the commercial operation date and the CEA determination regarding the validity of the constraint.

Additionally, the SRC recommends that Part 8.2 be revised as follows to require Generator Owners to react to knowledge of changed circumstances outside of the 24-month review cycle: “Review any Generator Cold Weather Constraint declaration validated by the CEA every 24 calendar months ***and upon gaining actual knowledge of a material change in the circumstances that formed the basis for the Generator Cold Weather Constraint declaration*** to determine . . .”

Finally, the SRC recommends that Part 8.4 be clarified by ending the first sentence at “Part 7.1” and turning the remaining language into a separate sentence, as follows: “ . . . Part 7.1. The deadlines from the Part 6.1 and Part 7.1 timetables shall be calculated based on the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid.”	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team appreciates the constructive feedback and suggested language and has modified the standard to incorporate some of the concepts and improve clarity.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	
Comment	
While NV Energy supports in part the approach that the DT has taken to address FERC Commission Directives contained in the June 27, 2024 FERC Order, Approving Extreme Cold Weather Reliability Standard EOP-012-2 And Directing Modifications, we do not support the proposed definition for Generator Cold Weather Constraint. The definition for Generator Cold Weather Constraints contained in the previous version provided the industry with useful criteria that has been lost in the revised version. And while we see value in the information provided in Attachment 1, that information could be contained in another technical document supporting this standard (i.e., Technical Rationale or Implementation Guidance), if the definition and criteria was revised to more closely aligned to the directives contained in the Order. To address our concerns, we offer the following edits (in boldface) to the Generator Cold Weather Constraints definition: **Generator Cold Weather Constraint –** Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods,	

or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions. (*Strikethroughs have been omitted for clarity*)

Criteria used to determine a **Generator Cold Weather Constraint shall consider the following:**

- **A determination through an engineering analysis that the freeze protection measures lack reasonable assurances of efficacy and there is no record that such protections have been effectively utilized on** generating units **of a** comparable types in regions that experience similar winter climate conditions;
- **A determination through engineering analysis that there are no available freeze protection measures, commercially available, that have been proven to be effective at mitigating the effects of the Extreme Cold Weather Temperature identified in the region where the resource is installed**; or
- **A determination through an engineering economic analysis has been made that determines that the implementation of freeze protection measures necessary to mitigate the effects of the Extreme Cold Weather Temperature, while feasible, would result in the early retirement of the resource.**

NV Energy also recommends there be an "approval by default" if the CEA does not respond within a given period, for example 30 days after submittal to CEA.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The Drafting Team appreciates the constructive input, particularly as it relates to the Generator Cold Weather Constraint definition and has modified the standard language to improve clarity. The "approval by default" approach does not meet the FERC directive for NERC to receive, review, evaluate and confirm the validity of a Generator Cold Weather Constraint.

Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	

Comment	
See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see the the response to EEI's comment.	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	No
Document Name	
Comment	

PNM agrees with the comments of EEI:

While EEI supports in part the approach that the DT has taken to address FERC Commission Directives contained in the June 27, 2024 FERC Order, Approving Extreme Cold Weather Reliability Standard EOP-012-2 And Directing Modifications, we do not support the proposed definition for Generator Cold Weather Constraint. The definition for Generator Cold Weather Constraints contained in the previous version provided the industry with useful criteria that has been lost in the revised version. And while we see value in the information provided in Attachment 1, that information could be contained in another technical document supporting this standard (i.e., Technical Rationale or Implementation Guidance), if the definition and criteria were revised to more closely align to the directives contained in the Order. To address our concerns, we offer the following edits (in boldface) to the Generator Cold Weather Constraints definition:

Generator Cold Weather Constraint – *Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions. (Strikethroughs have been omitted for clarity)*

Criteria used to determine a ***Generator Cold Weather Constraint shall consider the following:***

A determination through an engineering analysis that the freeze protection measures lack reasonable assurances of efficacy and there is no record that such protections have been effectively utilized on *generating units* ***of a*** *comparable types in regions that experience similar winter climate conditions;*

A determination through engineering analysis that there are no available freeze protection measures, commercially available, that have been proven to be effective at mitigating the effects of the Extreme Cold Weather Temperature identified in the region where the resource is installed*; or*

{C}· ***A determination through an engineering economic analysis has been made that determines that the implementation of freeze protection measures necessary to mitigate the effects of the Extreme Cold Weather Temperature, while feasible, would result in the early retirement of the resource.***

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The Drafting Team appreciates the constructive input, particularly as it relates to the Generator Cold Weather Constraint definition and has modified the standard language to improve clarity.

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company

Answer	No
Document Name	

Comment

Southern Company Agrees with the comments from EEI and NAGF.

Likes 0	
Dislikes 0	

Response	
Thank you for your comment, please see response to EEI and NAGF.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	
Comment	

Invenergy appreciates the SDT's approach to addressing the FERC directives and we believe the changes in EOP-012-3 work toward meeting those directives. Still, we have concerns regarding the administrative burden placed upon Generator Owners and we would like to offer the recommendations below that provide additional clarity and/or address the directives in an equally effective manner.

Definition:

Consider revising the definition to read, "Any condition, subject to validation by the Compliance Enforcement Authority, that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components." This clarifies that certain criteria must be validated for a condition to be considered a Generator Cold Weather Constraint.

R8:

Invenergy recommends simplifying R8.1 to read, "Submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 days of determining that the Generator Cold Weather Constraint is applicable." As drafted, the multiple constraint declaration tracks introduce confusion for no real reliability gain.

Invenergy recommends allowing 36 months for the revalidation of any constraint declaration. Constraint declarations are unlikely to change frequently. Additionally, please clarify in R8.2 if the revalidation of constraint declarations is to occur 24 calendar months following the date of CEA validation. It may be beneficial to create a separate requirement for the actions currently prescribed in R8.2.

Attachment 1:

If the intent of the standard is that all Generator Cold Weather Constraint declarations must be submitted to the CEA for validation, then Invenergy recommends replacing "Pre-Approved Generator Cold Weather Constraints" with "Known Generator Cold Weather Constraints."

The final two bullets under the Pre-Approved Generator Cold Weather Constraint header seem to refer more to possible solutions to a constraint, rather than the circumstances that constitute the constraint. Consider reframing the bullets to reference the lack of deployable solutions to remove accumulated frozen precipitation on solar panels or on combustion turbine inlet air filters. Invenergy is worried that the disregard in Attachment 1 of commercial concerns that do not rise to the level of premature retirement of an existing facility places unreasonable expectations on the Generator Owner to procure equipment or apply freeze protection measures that, based on the Generator Owner's operating experience or analysis, may not suit the needs of the Generator Owner. We recommend that the language make more accommodations for Generator Owners to be able to pursue reliable generation in a manner that best fits their unique circumstances. We recommend striking the final sentence of Attachment 1 as it does not provide any additional criteria relevant to the declaration of a constraint.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The Drafting Team appreciates the constructive feedback and suggested language and has modified the standard to incorporate some of the concepts and improve clarity.

Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	

Comment
Invenergy appreciates the SDT’s approach to addressing the FERC directives and we believe the changes in EOP-012-3 work toward meeting those directives. Still, we have concerns regarding the administrative burden placed upon Generator Owners and we would like to offer the recommendations below that provide additional clarity and/or address the directives in an equally effective manner. **Definition:**

Consider revising the definition to read, “Any condition, subject to validation by the Compliance Enforcement Authority, that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components.” This clarifies that certain criteria must be validated for a condition to be considered a Generator Cold Weather Constraint.

R8:

Invenergy recommends simplifying R8.1 to read, “Submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 days of determining that the Generator Cold Weather Constraint is applicable.” As drafted, the multiple constraint declaration tracks introduce confusion for no real reliability gain.

Invenergy recommends allowing 36 months for the revalidation of any constraint declaration. Constraint declarations are unlikely to change frequently. Additionally, please clarify in R8.2 if the revalidation of constraint declarations is to occur 24 calendar months following the date of CEA validation. It may be beneficial to create a separate requirement for the actions currently prescribed in R8.2.

Attachment 1:

If the intent of the standard is that all Generator Cold Weather Constraint declarations must be submitted to the CEA for validation, then Invenergy recommends replacing “Pre-Approved Generator Cold Weather Constraints” with “Known Generator Cold Weather Constraints.”

The final two bullets under the Pre-Approved Generator Cold Weather Constraint header seem to refer more to possible solutions to a constraint, rather than the circumstances that constitute the constraint. Consider reframing the bullets to reference the lack of deployable solutions to remove accumulated frozen precipitation on solar panels or on combustion turbine inlet air filters.

Invenergy is worried that the disregard in Attachment 1 of commercial concerns that do not rise to the level of premature retirement of an existing facility places unreasonable expectations on the Generator Owner to procure equipment or apply freeze protection measures that, based on the Generator Owners operating experience or analysis, may not suit the needs of the Generator Owner. We recommend that the language make more accommodations for Generator Owners to be able to pursue reliable generation in a manner that best fits their unique circumstances.

We recommend striking the final sentence of Attachment 1 as it does not provide any additional criteria relevant to the declaration of a constraint.

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team appreciates the constructive feedback and suggested language and has modified the standard to incorporate some of the concepts and improve clarity.	
Robert Blackney - Edison International - Southern California Edison Company - 1	
Answer	No
Document Name	
Comment	
See comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to EEI's comment.	
Stephanie Kenny - Edison International - Southern California Edison Company - 6	
Answer	No
Document Name	
Comment	
See EEI comments	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. Please see response to EEI's comment.	
Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	
Comment	
Enel North America agrees with the MRO NSRF recommendation that there be an "approval by default" if the CEA does not respond within a given period, for example 30 days after submittal to CEA.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity. The "approval by default" approach does not meet the FERC directive for NERC to receive, review, evaluate and confirm the validity of a Generator Cold Weather Constraint.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	
Comment	
OPG supports BC Hydro's comment: "BC Hydro is supportive of the revisions to the revised Generator Cold Weather Constraint definition. However, to add clarity on Freeze Protection Measures, BC Hydro recommends retaining the following wording "Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions" in EOP-012-3 associated documentation, such as the Technical Rationale." And "Please also clarify in the language of the Requirement whether these are calendar or business days.".	

OPG supports NBPower's comment: "The pre-approved Generator Cold Weather Constraints (GCWCs) in Attachment 1 could be problematic in some jurisdictions, since Requirement R8 and Attachment 1 are referenced for Requirement R2 Part 2.2 for new designs on a go-forward basis. In particular, the pre-approved GCWC should not be set up in such a way as to exempt generating unit developers from doing proper due diligence. At least for future designs (Requirement R2 Part 2.2) all Generator Cold Weather Constraints should be assessed on a case-by-case basis. Pre-approved GCWCs should be avoided, or if used at all, limited to existing or already committed designs, since technology and the needs of the grid may be expected to change in the future and existing pre-approvals may no longer be appropriate."

OPG has the following comments: Additional clarification is required regarding GCWC CEA applicability/validity confirmation & determination implications for unit present/future operation.

Please clarify the role of CEA – review for constraint presence, validity confirmation, or approval, and the requirements the CEA need to satisfy to perform its role.

Attachment 1 bullet #3 appears to be the BA purview and not the CEA.

In the context of this standard a freeze protection measure can negatively impact the revenue of a market participant, yet still be required to be implemented for compliance purposes. Please explain how was derived the "more than three percent" criterion and the justification for argument that it will fit all the market participants, from any geographical location.

Attachment 1 last paragraph state that "An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.".

The overall intent of the Extreme Cold Weather Preparedness and Operations standard is to:" Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature;"

By definition, the "**Generator Cold Weather Constraint** – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components.". As written, this appears to be an actual requirement to operate at the ECWT, which cannot be reconciled with an approved Generator Cold Weather Constraint declaration."

There is a risk for future generation designs introduced by Attachment 1 via geographical limitation for specific technologies in the Pre-Approved Generator Cold Weather Constraints list.

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity.	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	

BC Hydro appreciates the drafting team's efforts and the opportunity to comment, and offers the following comments and suggestions:

1. BC Hydro is supportive of the revisions to the revised Generator Cold Weather Constraint definition. However, to add clarity on Freeze Protection Measures, BC Hydro recommends retaining the following wording "*Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions"* in EOP-012-3 associated documentation, such as the Technical Rationale. Please also clarify in the language of the Requirement whether these are calendar or business days.
2. For Requirement R8 Part 8.1 BC Hydro recommends adding "or" after "is applicable" to further clarify the two separate timeline requirements.

Likes 2	JEA, 1, McClung Joseph; SaskPower, 1, Guttormson Wayne
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes

Document Name	
Comment	
FirstEnergy has no concerns.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
AZPS agrees with the approach.	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
R6 contains the phrase “The Generator Owner shall” in two places. Suggest deleting the second phrase as follows:	

R6. *Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop and implement a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed before the first day of July, but not more than 150 days after the Generator Cold Weather Reliability Event. The Generator Owner shall:* Suggest modifying R6.2 as follows (replacing "where" for "if") for clarity: ***6.2.*** *Update the Corrective Action Plan action(s) and timetable(s), with justification, and submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval if where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 6.1. The submitted Corrective Action Plan extension request shall include the following;*

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language and has modified the standard to incorporate some of the concepts and improve clarity .	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
The NPCC RSC agrees with the simplified definition. There seems to be adequate language to request a CAP extension beyond the December 1, 2024, deadline if necessary. Attachment 1 clearly outlines the expectations.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
Please consider saying “calendar days” versus simply “days” in Requirement R8 Part 8.1	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language and has modified the standard accordingly to improve clarity.	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	Yes
Document Name	
Comment	
1. RF would recommend adding that the CEA will timely review the Constraint declarations for validity and provide the GO notice of its determination. 2. As the CEA we would not be able to challenge early retirement based on financials (Refer to Attachment 1).	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The Drafting Team appreciates the constructive feedback and has modified the standard to improve clarity.	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	

Texas RE has some concerns regarding the proposed definition of Generator Cold Weather Constraint, consistency between Requirements R1 and R8, and to whom annual training shall be given in Requirement R5.

Definition

Texas RE is concerned that the definition of Generator Cold Weather Constraint proposed under the terms is inconsistent with the description of Generator Cold Weather Constraint in Attachment 1. The definition states that a Generator Cold Weather Constraint is "Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components." The description in Attachment 1, however, says "A Generator Cold Weather Constraint is any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the following criteria:" and lists out pre-approved Generator Cold Weather Constraints and case-by-case Generator

Cold Weather Constraints. The proposed definition cannot be read without the additional information in Attachment 1, yet the proposed definition does not reference Attachment 1.

Texas RE proposes that either the proposed NERC Glossary definition include all of the information in Attachment 1, an explicit reference to Attachment 1, or eliminate the proposed NERC Glossary definition altogether and simply use the term as part of the requirements that is described in Attachment 1 and noted as such in the requirement language.

Consistency between Requirements R1 and R8

For verbiage consistency in Requirement R1, Texas RE recommends adding the word 'calendar' to Requirement 1.1.1 for developing new corrective actions after recalculation (in bold):

1.1.1 If the re-calculated Extreme Cold Weather Temperature (ECWT) is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation. If new corrective actions are needed to provide the required operational capability under Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) **calendar** months of the recalculation.

Although Requirement R8 requires shorter timeframe for timely review and evaluation of declared Generator Cold Weather Constraints, the calculation timeframe used in Requirement R1 for identifying Extreme Cold Weather Temperature to review and identify new corrective actions to provide the required operational capability remains five calendar years. Texas RE suggests revising Requirement R1 for Generator Owner to perform the ECWT calculations every 24 calendar months instead of every five calendar years, to be consistent with Requirement R8 and to ensure that most recent information is used to prepare unit's cold weather preparedness plan. Performing the ECWT calculations biennially could also help to include any 'Lessons Learned' from the latest weather event and reviewing/updating any operating limitations in the Generator Cold Weather Constraint declaration under Requirement R8. Texas RE recommends the following revision (in bold):

R1. At least once every **24 calendar months five calendar years**, each Generator Owner shall, for each of its applicable generating unit(s): [Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]

Requirement R5 Current language for Requirement R5 states that annual training shall be provided to maintenance or operations personnel responsible for implementing the cold weather preparedness plan(s). In many cases maintenance personnel implementing the plans and operational personnel responsible for implementing the plans in real-time could be different individuals. Therefore, it is important to provide training for both maintenance and operations personnel responsible for implementing the cold weather preparedness plan(s). Texas RE recommends the following revision (in bold): R5. Each Generator Owner in conjunction with its Generator Operator shall identify the entity responsible for providing the generating unit-specific training, and that identified entity shall provide annual training to its maintenance **or and** operations personnel responsible for implementing the cold weather preparedness plan(s) developed pursuant to Requirement R4.	
Likes 1	JEA, 1, McClung Joseph
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team appreciates the constructive feedback and suggested language and has modified the standard to incorporate some of them and improve clarity.	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments.	
Alan Wahlstrom - Southwest Power Pool, Inc. (RTO) - NA - Not Applicable - MRO,WECC	
Answer	
Document Name	
Comment	
SPP agrees with the comments of The ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to ISO/RTO council	
Wayne Guttormson - SaskPower - 1	
Answer	
Document Name	
Comment	
Support BC Hydro's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to BC Hydro.	

2. In paragraph 68 of the June 2024 Order, FERC directed NERC to modify Requirement R7 of EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. FERC provided an example for how to address this directive, such as to require shorter timeframes for those units that have experienced issues and allow longer timeframes to address similar potential issues across a fleet for those units that have not experienced issues.

The drafting team modified Requirement R6 of EOP-012-2 to require a shorter deadline to implement corrective actions for those generating units that experience a Generator Cold Weather Reliability Event. Do you agree with the revised timelines? Please provide any additional comments to consider. If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team. Please review the posted draft ERO Enterprise document, EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process.

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	EOP-012-3 Constraint and CAP Process 10172024 - NAGF comments final.pdf

Comment

The NAGF notes that the timelines for the CAPs may create a significant burden since the GO cannot simply take outages to address these issues. It is unclear if these outages will take priority over other outages due to the very short timelines required for compliance or if other outages, many of which are probably more important for reliability all year long, will take priority. As an example of this concern, in PJM planned outages are not allowed from the 24th week to the 36th week of each calendar year. In 2024, this means that an outage cannot be scheduled from June 10th to September 9th. The NAGF's experience with project planning and execution shows that a CAP for Cold Weather Reliability Events is unlikely to be developed, equipment purchased and delivered and labor lined up to perform the installation between the date of the event, say mid-January and June 10th, particularly if widespread failures due to extreme winter weather create such demand for retrofit equipment and installation services that supply chains simply cannot keep up. This means the GO will have 11 weeks between September 9 and December 1 to schedule an outage to perform the needed tasks. (And determine within the first 17 days of these 11 weeks if an extension may be needed under the proposed 60-day filing requirement in the process document.) The fall season is often filled to the maximum with planned outage work, and the resources needed to add massive new tasks at the last minute do not exist. Has NERC or FERC or any Balancing Authorities performed any review to see how many additional outages

can be scheduled in these 11 weeks? Or is it possible that NERC and FERC (and the RTO/ISO Council that submitted the comments FERC based their order on) are going to create an unreasonable expectation? Regardless of this concern, the Process document has many areas that raise concerns to the NAGF. The NAGF has provided a copy of the process document with comments to help the SDT understand the concerns. Some areas of concern raised by the process document includes a deadline to submit a request for CAP extension that does not take into account issues beyond the GO's control, a statement that the GO must first work with the CEA before filing the request, which effectively moves the deadline back even further, the statement requiring "due diligence in ordering" without defining exactly what the CEA may consider due diligence, Another issue of concern is the requirement to file a constraint declaration for the same recurring event types. As an example, if a wind farm has blade icing occur in the winter of 2025, it must create a CAP, make a declaration, file the declaration and then every other year review that declaration. If the same wind farm (or different wind farm owned by the same entity) has a blade icing event in 2026, the same CAP, declaration and review will be required again. In the course of 10 years, this owner is likely to have 10 declarations for the same thing, reviewing 5 of them each year. This is not a mere theoretical concern; ice storms are quite common in the southern US, and having to make new filings for each one would constitute mere regulatory churn. This process will not improve reliability and will take time away from entities' ability to actually provide more reliable service to the grid. This process should be revised to address the need to process duplicative reports by generators. Finally, it is unclear how the timelines proposed in the process document posted with the standard may impact compliance. As an example, if a Generator Owner files for a CAP extension 30 days before the CAP deadline, does this cause a violation? Or does the request get immediately denied without review because it does not meet the timeline specified in the document and therefore the Generator Owner will be deemed to have violated the standard when they cannot complete the CAP by the deadline?	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT defers proposed comments regarding changes in the process to NERC staff. The DT has made changes to ensure clarity in terms of expectations regarding CAPs and Generator Cold Weather Constraints.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	

Comment
OPG supports HQ comments: 'The Generator Cold Weather CAP Extension and Constraint Process document should be updated to reflect Canadian-specific language regarding applicable governmental authorities, for example, similar to the language used in the footnote 11." OPG supports Manitoba Hydro's comment recommending that for non-US Registered Entities: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner. OPG supports BC Hydro's comment (freezing precipitation in Québec can and has occurred in March and April months) regarding Requirement "R6: Similar to previously submitted comments, in Québec, Canada, Generator Cold Weather Reliability Events such as freezing precipitation, can and have happened well into the Spring calendar months (including April and May). The requirement to develop a CAP within 150-days of the Event is reasonable. However, the first day of July deadline will considerably reduce the CAP development timeline for late Spring Events. Worst case scenario, for a May Event, identification of common failure causes, solution identification and CAP development would need to be done in less than 45 days, which may result in an inadequate CAP. The addition of the December 1 deadline to implement a CAP (R6 Part 6.1.5) would ensure that adequate CAPs are developed and implemented before the next Winter season. With the addition of the December 1 deadline, HQ recommends deleting "the first day of July" language. "

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The DT defers proposed comments regarding changes in the process to NERC staff. Additional language is often added by the applicable governing authority when adopting the NERC Standard and will leave specifics to those responsible for managing those processes.

Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	

Comment

Enel North America agrees with NAGF's comments on this question and that the revised timelines on CAPS could create a significant burden on GOs.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments, please see responses to NAGF comments.	
Stephanie Kenny - Edison International - Southern California Edison Company - 6	
Answer	No
Document Name	
Comment	
See EEI comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments, please see response to EEI comments.	
Robert Blackney - Edison International - Southern California Edison Company - 1	
Answer	No
Document Name	
Comment	
See comments submitted by EEI.	
Likes 0	

Dislikes 0	

Response
Thank you for your comments, please see response to EEI comments.

Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	

Comment

If the expectation is that Generator Owners are to monitor for Generator Cold Weather Reliability Events throughout the year, rather than only during the winter season, then please consider the following revisions:

1. Strike “before the first day of July” from Requirement R6 and simply require that Corrective Action Plans be developed no more than 150 days after the Generator Cold Weather Reliability Event. This ensures that each event receives the same amount of time, regardless of when it occurs.

2. Consider revising Requirement R6.1.5 to read, “A timetable specifying that implementation of the Corrective Action Plan shall be completed prior to the first day of December of the next calendar year following the Generator Cold Weather Reliability Event; and”

These revisions would provide greater flexibility to the Generator Owner to schedule any needed maintenance outages in a manner that better supports reliability and keeps generators online.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The DT made significant changes to Requirement R6 based on industry comments. The language proposed does not support timely execution of Corrective Action Plans for Generator Cold Weather Reliability Events that occur in the first parts of a year (e.g., January).

Colin Chilcoat - Invenergy LLC - 6

Answer	No
Document Name	
Comment	

If the expectation is that Generator Owners are to monitor for Generator Cold Weather Reliability Events throughout the year, rather than only during the winter season, then please consider the following revisions:

1. Strike “before the first day of July” from Requirement R6 and simply require that Corrective Action Plans be developed no more than 150 days after the Generator Cold Weather Reliability Event. This ensures that each event receives the same amount of time, regardless of when it occurs.
2. Consider revising Requirement R6.1.5 to read, “A timetable specifying that implementation of the Corrective Action Plan shall be completed prior to the first day of December of the next calendar year following the Generator Cold Weather Reliability Event; and”

These revisions would provide greater flexibility to the Generator Owner to schedule any needed maintenance outages in a manner that better supports reliability and keeps generators online.

Likes 0	
Dislikes 0	
Response	

Thank you for your comments. The DT made significant changes to Requirement R6 based on industry comments.The language proposed does not support timely execution of Corrective Action Plans for Generator Cold Weather Reliability Events that occur in the first parts of a year (e.g., January).

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators

Answer	No
Document Name	
Comment	

We at ACES greatly appreciate the monumental effort put forth by the drafting team in developing the proposed updates to EOP-012-2 in accordance with the FERC directives.

From the perspective of ACES, the proposed modifications to Requirement R6, while a good start, would benefit from further refinement. We believe that, as written, the timelines identified in Requirement R6 are too elastic and unduly discriminate against the GO based solely upon the date the generating unit(s) experienced a Generator Cold Weather Reliability event.

It is our opinion that the required compliance timeline would be best defined by removing the inherent obscurity associated with using specific calendar days. In short, we recommend using a timeline based solely on a defined quantity of calendar days and removing all references to explicit months and days. Please consider the following example scenarios as an illustration:

- Generating Unit 1 belonging to Entity A experiences a Generator Cold Weather reliability event on November 1st, 2024. Per the currently proposed version of Requirement R6, Entity A has until April 1st, 2025, to develop a CAP (150 days after).
- Generating Unit 2 belonging to Entity B experiences a Generator Cold Weather reliability event on March 17th, 2025. Per the currently proposed version of Requirement R6, Entity B has until June 30th, 2025, to develop a CAP (before the first day of July).
- In the above examples, Entity A is allowed 150 days after their event to develop a CAP whereas, Entity B is only allowed 90 days after the same event type to do the same.
    - This results in an unequal application of the Reliability Standard by granting Entity A an additional 60 calendar days to complete the same compliance activities as Entity B.
    - Assuming both entities develop a CAP within 100 calendar days of the event date:
        - Entity A would be compliant with Requirement R6.
        - Conversely, Entity B would be in violation of Requirement R6 and would potentially be subject to a compliance Penalty.

It is the viewpoint of ACES that entities should be provided with the **same** length of time to complete compliance activities required by a Reliability Standard. We recommend that the timeline be modified to 120 calendar days regardless of when the Generator Cold Weather Event occurs.

By examining NOAA Annual/Seasonal Climate Normals data, we were able to determine that almost all areas of the lower 48 US states experience the last spring freeze on or before May 28th (90% probability) and the first fall freeze on or after September 18th (90% probability). As there are 113 days between these two dates, we believe that a strict 120 calendar day metric is a reasonable alternative.

Additionally, it is our opinion that the timeline to address similar potential issues across a fleet for those units that have not experienced issues is too short. We are concerned that a GO with either a large generating fleet (large IOU) or limited resources (small electric cooperative), may not be able to complete all corrective actions on all applicable units within 24 calendar months. We believe that 36 calendar months is more appropriate to allow for variability between GOs across the industry. Thus, we recommend modifying Requirement R6 as follows (note: for the sake of brevity, the requirement text for any sections without recommended changes has been omitted): R6 Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop and implement a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed no more than 120 calendar days after the Generator Cold Weather Reliability Event. The Generator Owner shall: 6.1.5. A timetable specifying that implementation of the Corrective Action Plan shall be completed within 12 calendar months of the Generator Cold Weather Reliability Event; and 6.1.6. A review of applicability to similar equipment freeze protection measures at generating units owned by the Generator Owner, with a specified timetable for corrective actions to be completed within 36 calendar months of the Generator Cold Weather Reliability Event.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The DT made significant changes to R6 to accommodate some of industry's comments while still supporting the FERC directives. FERC stated "The Commission has repeatedly expressed an urgency in completing cold weather Reliability Standards and having them implemented in a timely manner to address the risks presented by cold weather events on the reliability of the Bulk-Power System." in its June Order with associated directives. While there may be instances where utilities may not be able to meet the 24 calendar months, the proposed language offers approaches for CAP extensions and declaration of Generator Cold Weather Constraints. No change.

Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No

Document Name	
Comment	
See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments, please see response to EEI comments.	
Michael Bowman - City Utilities of Springfield, Missouri - 1	
Answer	No
Document Name	
Comment	
Recent changes to Southwest Power Pool (SPP) policy require all planned outages for the summer season to be submitted by February 15th. With the proposed shortened timeline to implement and complete a Corrective Action Plan and the associated freeze protection measures, a late season Generator Cold Weather Reliability Event could require scheduling an outage that has not been authorized by SPP to implement required corrective actions by the proposed December 1st deadline. This would negatively impact an entity's Performance Based Accreditation (PBA) SPRM recommends an exception or preapproved extension for instances when implementing corrective actions would require an outage not authorized by an entity's Balancing Authority.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments, the DT defers proposed comments regarding changes in the process to NERC staff.	
Richard Jackson - U.S. Bureau of Reclamation - 1	

Answer	No
Document Name	
Comment	
Reclamation does not agree. Shortening time frames does not alleviate the burden of lack of material, contracting resources or other schedulable items. Cost and timeframe are always intertwined. For example, government bid processes are often time consuming and shortening corrective action timeframe requirements could cause the entity to become non-compliant.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	
Comment	
Vistra agrees with comments made by Duke Energy.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments, please see response to Duke's comments.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	

Comment
EEI does not object to the proposed shortened deadlines except for the language in Requirement R6, subpart 6.1.6. We understand 6.1.6 to mean that a GO is to complete freeze protection CAPs on similar equipment vulnerabilities within 24 months, however, we disagree that this is what the Commission directed in Paragraph 68 of the order. What they directed was that corrective actions needed to be taken on "similar equipment on all of its fleet within 24 months of becoming **aware of the freeze issue**." In other words, the clock should start after the GO has confirmed similar vulnerabilities on similar equipment on other generating resources. To address this issue, EEI suggests adding the following clarifying language to 6.1.6 as suggested below in boldface: **6.1.6.** A review of applicability **of** similar **freeze protection** equipment **installed on similar generating units within 12 calendar months of the of the Generator Cold Weather Reliability event** by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of **confirming a generating unit has similar equipment vulnerabilities**;

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The DT disagrees with the interpretation as the "freeze issue" references the freezing issue causing the Generator Cold Weather Reliability Event. Since the freeze protection measures should be known for each generating unit, the cause of the Generator Cold Weather Reliability Event will be identified, and annual maintenance/inspection will be occurring, it seems plausible that implementation of corrective actions should occur within 24 calendar months of the Generator Cold Weather Reliability Event. The Standard allows flexibility for extending Corrective Action Plans. The suggestion supplied provides no timeframe for determining applicability which would mean a GO could take as long as they want BEFORE starting the 24-calendar month clock. This does not meet the FERC stated urgency to address this risk.

Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	

Comment
We do not object to the proposed shortened deadlines except for the language in Requirement R6, subpart 6.1.6. We understand 6.1.6 to mean that a GO is to complete freeze protection CAPs on similar equipment vulnerabilities within 24 months, however, we disagree

that this is what the Commission directed in Paragraph 68 of the order. What they directed was that corrective actions needed to be taken on "similar equipment on all of its fleet within 24 months of becoming **aware of the freeze issue**." In other words, the clock should start after the GO has confirmed similar vulnerabilities on similar equipment on other generating resources. To address this issue, we suggest adding the following clarifying language to 6.1.6 as suggested below in boldface: **6.1.6.** A review of applicability **to of** similar **freeze protection** equipment **installed on similar generating units within 12 calendar months of the of the Generator Cold Weather Reliability event** by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of **confirming a generating unit has similar equipment vulnerabilities**;	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT disagrees with the interpretation as the "freeze issue" references the freezing issue causing the Generator Cold Weather Reliability Event. Since the freeze protection measures should be known for each generating unit, the cause of the Generator Cold Weather Relaibility Event will be identified, annual maintenance/inspection will be occurring, it seems plausible that implementation of corrective actions should occur within 24 calendar months of the Generator Cold Weather Reliability Event. The Standard allows flexibility for extending Corrective Action Plans. The suggestion supplied provides no timeframe for determining applicability which would mean a GO could take as long as they want BEFORE starting the 24-calendar month clock. This does not meet the FERC stated urgency to address this risk.	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	No
Document Name	
Comment	
The Generator Cold Weather CAP Extension and Constraint Process document should be updated to reflect Canadian-specific language regarding applicable governmental authorities, for example, similar to the language used in the footnote 11.	

Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner. NB Power supports BC Hydro's comment (freezing precipitation in Québec can and has occurred in March and April months) regarding Requirement "R6: Similar to previously submitted comments, in Québec, Canada, Generator Cold Weather Reliability Events such as freezing precipitation, can and have happened well into the Spring calendar months (including April and May). The requirement to develop a CAP within 150-days of the Event is reasonable. However, the first day of July deadline will considerably reduce the CAP development timeline for late Spring Events. Worst case scenario, for a May Event, identification of common failure causes, solution identification and CAP development would need to be done in less than 45 days, which may result in an inadequate CAP. The addition of the December 1 deadline to implement a CAP (R6 Part 6.1.5) would ensure that adequate CAPs are developed and implemented before the next Winter season. With the addition of the December 1 deadline, HQ recommends deleting "the first day of July" language. "

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The DT defers proposed comments regarding changes in the process to NERC staff. Additional language is often added by the applicable governing authority when adopting the NERC Standard and will leave specifics to those responsible for managing those processes. TheThe DT made significant changes to Requirement R6 based on industry comments.

Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	No
Document Name	

Comment
Ameren agrees with NAGF's comments.

Likes 0	

Dislikes 0	
Response	
Thank you for your comments. Please see responses to NAGF comments.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	
Avista does not object to the proposed shortened deadlines except for the language in Requirement R6, subpart 6.1.6. We understand 6.1.6 to mean that a GO is to complete freeze protection CAPs on similar equipment vulnerabilities within 24 months, however, we disagree that this is what the Commission directed in Paragraph 68 of the order. What they directed was that corrective actions needed to be taken on "similar equipment on all of its fleet within 24 months of becoming **aware of the freeze issue**." In other words, the clock should start after the GO has confirmed similar vulnerabilities on similar equipment on other generating resources. To address this issue, EEI suggests adding the following clarifying language to 6.1.6 as suggested below in boldface: **6.1.6.** A review of applicability **to of** similar **freeze protection** equipment **installed on similar generating units within 12 calendar months of the of the Generator Cold Weather Reliability event** by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of **confirming a generating unit has similar equipment vulnerabilities**;	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT disagrees with the interpretation as the "freeze issue" references the freezing issue causing the Generator Cold Weather Reliability Event. Since the freeze protection measures should be known for each generating unit, the cause of the Generator Cold Weather Relaibility Event will be identified, annual maintenance/inspection will be occurring, it seems plausible that implementation of corrective actions should occur within 24 calendar months of the Generator Cold Weather Reliability Event. The Standard allows flexibility for extending Corrective Action Plans. The suggestion supplied provides no timeframe for determining	

applicability which would mean a GO could take as long as they want BEFORE starting the 24-calendar month clock. This does not meet the FERC stated urgency to address this risk.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	

AES US Renewables are in agreement that any corrective actions needed to mitigate root cause(s) resulting from a Generator Cold Weather Reliability Event should be completed as expeditiously as possible. However, we have real concerns about the ability to complete the CAP by December 1 if the Generator Cold Weather Reliability Event (GCWRE) occurred in the same year. For example, winter storms in the northeast can still occur as late as in March. With that in mind, it will be difficult to develop a CAP, implement the CAP and complete the CAP within 7-8 months if a generating facility located in northeast is impacted by the GCWRE. This time constraint will be reduced even further if there is extension request involved since it requires submittal of the extension at least 60 days in advance of the due date (December 1).

Additionally, we have concerns that corrective actions need to be completed within 24 months of the GCWRE at other sites owned by the Generator Owner for same equipment or freeze protection measures implicated in the root cause analysis for a site that experienced a GCWRE. This proposal may work for GOs that don't own a lot of sites. However, for IPPs that have generating assets in multiple regions, 24 months is not a realistic timeframe to complete the corrective actions. It will require time to send out RFPs to multiple contractors and then for internal review of the contractor proposals as well as negotiations involved. This could take up several months in best case scenario. And depending on the work that needs to be done, it will

require coordination with site-level personnel and outage coordination with other entities (eg: BAs, TOPs). So, we strongly suggest modifying the 24 calendar months to at least 36 calendar months.

Current proposed R6 requirement language does not specify when the extension requests need to be made. However, a companion document (*EOP-012-3 Constraint and CAP Process 10172024.pdf*) indicated that "*Entities are encouraged to submit the extension request as soon as they are aware they will not meet the CAP completion date but no later than **60 days** before the original required completion*

date." We would like to understand if the 60 days timeline is enforceable if it is not used within the R6 language. Furthermore, R6 language does not state what happens when the extension request is denied. Only the companion document specifies that *(If an extension request is denied, the selected actions in the Corrective Action Plan need to be completed in accordance with the original timetables.*). Again, we would like to understand if the language in the companion document is enforceable. It is stated in the companion document that if the extension request is denied, the CAP will need to be completed in accordance to its original timetable. This will not be feasible if the CAP extension request is submitted close to the December 1 deadline. The CEA is allowed minimum of 60 days for the whole extension approval process (15 days to acknowledge receipt and verify all information has been provided + 45 days of review before providing notification to registered entity on whether their request is approved or denied). There is potentially the need for the CEA to extend beyond the 45 days to perform their review. That will further reduce the length of time for the GO to complete the CAP based on original timeline if the CAP extension is denied. So, for a registered entity to implement the CAP prior to December 1, the time for CEA to review will eat into the time that registered entities have to investigate the GCWRE, develop CAP and implement CAP. Using the example for a GCWRE that occurs in March, this extension review process can reduce the time registered entity has from 7-8 months down to 5-6 months (which can be further reduced if certain ISO/RTO regions do not allow planned outages during certain times of the year like peak summer time). We request the drafting team to look into all possible scenarios to ensure that reasonable amount of time is allocated for developing CAP, implementing CAP and requesting CAP extension (if applicable). Currently, the timeline listed in R6 is not reasonable.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT defers proposed comments regarding changes in the process to NERC staff. Note that the FERC urgency noted in the June 2024 Order is reflected within the timelines suggested.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	No
Document Name	
Comment	

Under the proposed 6.1.5, there may be cases where remedies to correct results from an Extreme Cold Weather Reliability event may not be feasible to be completed by December due to vendor or supply chain issues. There should be some flexibility to allow for mitigation activities with longer lead times for complete resolution without going through a formal corrective action plan extension. The additional approval process needed for an extension is very inefficient and builds in potential delays that, if an extension is not approved, can set back the timing of a plan, creating a potential violation itself. Approval decisions would need to be mandated to be made in a short timeframe if they are still included in the standard. Finally, within the section, footnote 10 speaks to freeze events occurring outside a winter period, such as October and November. Please clarify what is the designated winter period as it relates to this standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Urgency was stressed by FERC in the June 2024 Order and timelines reflect that urgency. Flexibility has been introduced within the Standard and the associated process to accommodate issues. The DT defers proposed comments regarding changes in the process to NERC staff. As with previous DTs, a winter season was not defined as it varies widely across the Norh American electric grid.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	No
Document Name	
Comment	
Under the proposed 6.1.5, there may be cases where remedies to correct results from an Extreme Cold Weather Reliability event may not be feasible to be completed by December due to vendor or supply chain issues. There should be some flexibility to allow for mitigation activities with longer lead times for complete resolution without going through a formal corrective action plan extension. In addition, the additional approval process needed for an extension is very inefficient and builds in potential delays that, if an extension is not approved, can set back the timing of a plan. Approval decisions would need to have a short mandate timeframe if they are still included in the	

standard. Finally, within the section, footnote 10 speaks to freeze events occurring outside a winter period, such as October and November. Please clarify what is the designated winter period as it relates to this standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Urgency was stressed by FERC in the June 2024 Order and timelines reflect that urgency. Flexibility has been introduced within the Standard and the associated process to accommodate issues. The DT defers proposed comments regarding changes in the process to NERC staff. As with previous DTs, a winter season was not defined as it varies widely across the Norh American electric grid.	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	No
Document Name	
Comment	
PG&E supports both the NAGF and EEI concerns regarding outage scheduling and timeframe to address CAPs, as well as the process document concerns.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments, please see responses to EEI and NAGF.	
Chantal Mazza - Chantal Mazza On Behalf of: Junji Yamaguchi, Hydro-Quebec (HQ), 1, 5; Nicolas Turcotte, Hydro-Quebec (HQ), 1, 5; - Chantal Mazza	
Answer	No
Document Name	
Comment	

The Generator Cold Weather CAP Extension and Constraint Process document should be updated to reflect Canadian-specific language regarding applicable governmental authorities, for example, similar to the language used in the footnote 11."

HQ supports Manitoba Hydro's comment recommending that for non-US Registered Entities: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner.

HQ supports BC Hydro's comment (freezing precipitation in Québec can and has occurred in March and April months) regarding Requirement "R6: Similar to previously submitted comments, in Québec, Canada, Generator Cold Weather Reliability Events such as freezing precipitation, can and have happened well into the Spring calendar months (including April and May). The requirement to develop a CAP within 150-days of the Event is reasonable. However, the first day of July deadline will considerably reduce the CAP development timeline for late Spring Events. Worst case scenario, for a May Event, identification of common failure causes, solution identification and CAP development would need to be done in less than 45 days, which may result in an inadequate CAP. The addition of the December 1 deadline to implement a CAP (R6 Part 6.1.5) would ensure that adequate CAPs are developed and implemented before the next Winter season. With the addition of the December 1 deadline, HQ recommends deleting "the first day of July" language. "

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The DT defers proposed comments regarding changes in the process to NERC staff. Additional language is often added by the applicable governing authority when adopting the NERC Standard and will leave specifics to those responsible for managing those processes. TheThe DT made significant changes to Requirement R6 based on industry comments.

Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion

Answer	No
Document Name	

Comment

Dominion Energy supports EEI comments and further stipulates that the SDT has gone beyond the language and intent of the FERC Order. For larger generation entities with a diverse fleet, time for reviewing the specs for its fleet and identifiying potential cold weather issues should not be included in the 24 calendar month timeframe. Once the issue has been identified in a specific unit the clock should begin.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI comments.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI comments.	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	No
Document Name	
Comment	
The 3 types of items required to complete a Corrective Action Plan (CAP) under R1, R2 and R3 are the same 3 types of items required to complete a Corrective Action Plan under R6, qualified personnel, proper materials, and the required plant conditions. Any repair or	

modification that can reasonably be completed before December 1st in fact should be completed, however any repair or modification that needs an outage or if qualified materials and people are not available CAP completion may have to wait until the next planned outage. Planned outages are scheduled to maintain reliability. Adding unplanned outages either postpones scheduled outages or forces outages into periods of time when demand is high, therefore reducing the reliability to satisfy load requirements. The expertise for making decisions regarding the timing repairs is best left with the GOs, GOPs, and BAs. Any event after February 2nd will be due by July 1st. If the CEA takes 60 days to make a decision on an extension it is now August 30th. If that decision is NO, there are only 93 days until December 1st. Forcing completion of a CAP needing an extension will require either unqualified personnel, improper materials, or andan Unplanned Outage. All of which impact BES reliability. Instead of requiring CEA approval, require the entity to keep evidence justifying the decision to make the repair later than December 1st. This is appropriate for audit during a subsequent audit.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The DT had numerous discussions regarding the points you have raised during the Standard Development process and has made changes to Requirement R6 to include industry feedback and meet the FERC directive.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	No
Document Name	
Comment	
TEPC agrees with EEI's comments for section 6.1.6: *corrective actions needed to be taken on "similar equipment on all of its fleet within 24 months of becoming **aware of the freeze issue**." In other words, the clock should start after the GO has confirmed similar vulnerabilities on similar equipment on other generating resources*.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment, please see response to EEI.	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	No
Document Name	
Comment	
AZPS agrees with comments submitted by EEI on behalf of its members to add a 12-calendar month assessment period in the timeline criteria prior to having 24 calendar months to implement corrective actions to similar equipment.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments, please see response to EEI.	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation supports the comments submitted by NAGF and EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments, please see response to EEI and NAGF.	

Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and the North American Generator Forum (NAGF) on question 2	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments, please see response to EEI and NAGF.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
Duke Energy does not support the language used in requirement R6.1.5 which requires the resolution of all winter event corrective actions by December 1st of the following year. This interval is too restrictive to allow for evaluation and correction on many freeze protection repairs or for the installation of new freeze protection measures. The inadequacies of this time interval are compounded when the effects of a major winter storm are considered. Large storms, like Elliott or a Polar Vortex, impact multiple units across multiple utilities. It would be difficult for a GO to address multiple events in this timeframe with available vendor support, and competing against other utilities for these vendors will only make this situation worse. Maintaining R6.1.5 as proposed will also result in higher levels of extension approvals for CEAs to process. Duke Energy recommends the requirement be modified to a period of 24 calendar months.	
Likes 0	
Dislikes 0	

Response
Thank you for your comment. The DT had numerous discussions regarding the points you have raised during the Standard Development process and has made changes to Requirement R6 to include industry feedback and meet the FERC directive.

Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	

Comment
Manitoba Hydro recommends that for non-US Registered Entities: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner. Manitoba Hydro supports Hydro Quebec's comment: "The Generator Cold Weather CAP Extension and Constraint Process document should be updated to reflect Canadian-specific language regarding applicable governmental authorities, for example, similar to the language used in the footnote 11." Manitoba Hydro supports BC Hydro's comment (freezing precipitation in Manitoba can and has occurred in March and April months): "Requirement R6: Similar to previously submitted comments, in British Columbia, Canada, Generator Cold Weather Reliability Events such as freezing precipitation, can and have happened well into the Spring calendar months (including April and May). The requirement to develop a CAP within 150-days of the Event is reasonable. However, the first day of July deadline will considerably reduce the CAP development timeline for late Spring Events. Worst case scenario, for a May Event, identification of common failure causes, solution identification and CAP development would need to be done in less than 45 days, which may result in an inadequate CAP. The addition of the December 1 deadline to implement a CAP (R6 Part 6.1.5) would ensure that adequate CAPs are developed and implemented before the next Winter season. With the addition of the December 1 deadline, BC Hydro recommends deleting "the first day of July" language. "

Likes 0	

Dislikes 0	

Response
Thank you for your comment. The DT had numerous discussions regarding the points you have raised during the Standard Development process and has made changes to Requirement R6 to include industry feedback and meet the FERC directive. The DT defers proposed comments regarding changes in the Generator Cold Weather CAP and Extension and Constraint process to NERC staff. The DT has added several footnotes to the latest draft of EOP-012-3 to address your comments regarding non-US Registered Entities.

Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	No
Document Name	

Comment
Taking unplanned maintenance outages to meet a CAP deadline or pivot from a rejected CAP extension could be overburdensome to the GO. Clarity around timeliness, expectations, and exceptions could help alleviate pressure. Additionally, maintenance outages are typically planned during off-peak times. This limits availability to schedule last minute changes prior to the winter period.

Likes 0	
Dislikes 0	

Response
Thanks for your comments.

Joshua London - Eversource Energy - 1, Group Name Eversource	
Answer	No
Document Name	

Comment	
Eversource supports the comments of EEI.	
Likes 0	
Dislikes 0	

Response	
Thank you for your response, please see response to EEI comments.	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	No
Document Name	

Comment

1. Requirement R6: Similar to previously submitted comments, in British Columbia, Canada, Generator Cold Weather Reliability Events (Events) such as freezing precipitation, can and have happened well into the Spring calendar months (including April and May). The requirement to develop a Corrective Action Plan (CAP) within 150 days of the Event is reasonable. However, the July 1 deadline will considerably reduce the CAP development timeline for late Spring Events. Worst case scenario, for a May Event, identification of common failure causes, solution identification and CAP development would need to be done in less than 45 days, which may result in an inadequate CAP. The addition of the December 1 deadline to implement a CAP (R6 Part 6.1.5) would ensure that adequate CAPs are developed and implemented before the next Winter season. With the addition of the December 1 deadline, BC Hydro recommends deleting "the first day of July" language.
2. Requirement R6 Part 6.1.6 requires corrective actions be implemented to similar equipment freeze protection measures (FPMs) within 24 calendar months of a GCWRE. BC Hydro interprets "similar equipment freeze protection measures" as existing FPMs, and therefore the Part 6.1.6 timeline of 24 calendar months only applies to existing FPMs. Any identified need for new FPMs will follow a similar timeline to R7.1.2 which is up to 48 calendar months. Given the BC Hydro fleet size and possible differing design solutions for the same cause at different locations throughout the fleet, a longer implementation timeline (36 calendar months to 48 calendar months) may be required for new FPMs. BC Hydro requests that the DT confirm this understanding or clarify the timeline expectation for new FPMs implementation.
3. BC Hydro recommends that R6 Part 6.2.1 be revised to replace "how" with "why" for which better explains the rationale for circumstances beyond an entity's control.

4. Requirement R6 Part 6.1. "Ensure the Corrective Action Plan contains at a minimum:". BC Hydro notes that this wording does not align with other Standard Requirements that list what must be in a Procedure, Plan, etc. BC Hydro recommends revising the wording in R6 as appropriate so Part 6.1 would be: "6.1 The Corrective Action Plan shall include:"	
Likes 0	
Dislikes 0	
Response	
The DT had numerous discussions regarding the points you have raised during the Standard Development process and has made changes to Requirement R6 to include industry feedback and meet the FERC directive.	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	Yes
Document Name	
Comment	
PNM agrees with the comments of EEI: *EEI does not object to the proposed shortened deadlines except for the language in Requirement R6, subpart 6.1.6. We understand 6.1.6 to mean that a GO is to complete freeze protection CAPs on similar equipment vulnerabilities within 24 months, however, we disagree that this is what the Commission directed in Paragraph 68 of the order. What they directed was that corrective actions needed to be taken on "similar equipment on all of its fleet within 24 months of becoming* ***aware of the freeze issue****." In other words, the clock should start after the GO has confirmed similar vulnerabilities on similar equipment on other generating resources. To address this issue, EEI suggests adding the following clarifying language to 6.1.6 as suggested below in boldface:* ***6.1.6.*** *A review of applicability* ***to of*** *similar* ***freeze protection*** *equipment* ***installed on similar generating units within 12 calendar months of the of the Generator Cold Weather Reliability event freeze protection measures at generating units owned*** *by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of* ***the Generator Cold Weather Reliability Event confirming a generating unit has similar equipment vulnerabilities****;*	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments, please see response to EEI comments.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
NV Energy does not object to the proposed shortened deadline to implement corrective actions for generating units experiencing a Generator Cold Weather Reliability Event.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
MP feels that 24 months may be a short timeline in some cases but believes that the extension process should address any extenuating circumstances.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
Section 6.2 adequately addresses this situation, and Section 7.3 provides clarity on what needs to be submitted. From a Generator Owner (GO) perspective, here is some background on the likely reasoning for CAP extension requests and what the GO should be briefed on regarding expected deliverables: If an engineering study or similar activity is required to assess the balance of freeze protection measures, the GO may need to request a CAP extension. This is because such activities can take considerable time, depending on non-recurring O&M budgeting and implementation policies. The GO should be prepared to file a CAP extension request with a plan and timeline as soon as practicable, based on the known implementation timeline for assessing similar freeze protection measures.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
NERC needs to provide more clarity about where the CAP Extension and Constraint Process documents will be posted on NERC's website to make them easy to access. Also, if these processes are to be done through NERC's ERO Portal, and Registered Entities must file these through a Regional Entity, a contact for each Region should be established and published so Registered Entities will have a contact to address any process or access issues with the ERO Portal.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT defers proposed comments regarding changes in the Generator Cold Weather CAP and Extension and Constraint process to NERC staff.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no concerns.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Texas RE agrees with the timeline proposed in Requirement R6. For clarity, Texas RE recommends the following revision to Requirement Part 6.1.2 (in bold): 6.1.2. A list of actions to add new **freeze protection measures** or remedy issues with existing freeze protection measures;”	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
While AEP agrees with the overall substance of R6, we recommend that it be revised to indicate what it means to properly “implement” a Corrective Action Plan. Does it perhaps mean to complete what is later specified and required in R6.1, or something else entirely? If so, the phrase “complete the obligations of R6.1” may be preferable to “implement the Corrective Action Plan.” AEP requests this clarity be provided in the obligation.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thanks for your support.	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thanks for your support.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thanks for your support.	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thanks for your support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thanks for your support.	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thanks for your support.	

Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thanks for your support.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thanks for your support.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thanks for your support.	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thanks for your support.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	
Document Name	
Comment	
R6 states, “develop and implement” a Corrective Action Plan…”, with “and implement” being added in this version. For the situation where a CAP is not being developed but a Generator Cold Weather Constraint is being submitted, the “and implement” does not seem to fit this scenario. Also, Southern believes the intent for R6 is to require 6.1 and 6.2, **or** 6.3 and not to require all items in R6.1. For example, a timetable as mentioned in R6.1.5. If a Generator Cold Weather Constraint is declared, then a timetable obviously should not be required.	

In addition, then requirement in R6.1.5 could be a very aggressive goal especially if outages, manpower, or material limitations arise. Assuming these types of problems are deemed valid, then an extension would have to be approved. In addition, Southern agrees with the comments from NAGF related to the short timelines and potential difficulty scheduling outages for CAPS that involve taking a unit off for the necessary work. Southern does not agree that a Compliance Enforcement Authority's (CEA) approval of a CAP is consistent with a risk-based action that improves reliability. The insertion of the CEA into a registered entity's process of mitigating a reliability concern adds unneeded and burdensome administrative layers. The NERC standard should solely focus on identifying the problem and implementation of mitigating actions, both of which are in the registered entity's purview. The provision of an entity's mitigation plan to the CEA should be required, but only for compliance enforcement purposes. Actions that allow the CEA to go beyond an audit of the implementation plan are out of scope of the standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Each Generator Cold Weather Reliability Event requires a CAP. The only instance of a CAP not being needed for a Generator Cold Weather Constraint is Requirement R2 Part 2.2. The DT made significant changes to Requirement R6 based on industry comments and taking into consideration the FERC directives. Please see responses to NAGFs comments. CEA is only approving CAP extensions per the FERC directive.	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation supports NAGF Comments	

Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see responses to NAGF comments.	

3. In paragraph 70 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC.

The drafting team provided language changes in Requirements R6 and R7 for a Corrective Action Plan extension process. Do you believe that the proposed language changes meet the intent of paragraph 70 of the FERC Order? Please provide any additional comments to consider. If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	
MRO NSRF recommends that dates for which a registered entity is to be held to must be in the Requirement.	

MRO NSRF recommends there be an “approval by default” if the CEA does not respond within a given period, for example 30 days after submittal to CEA. MRO NSRF recommends that the existing 60-day corrective action plan extension request have caveats for scenarios when it is not determined until within in the 60 day period that an extension is required. There are various obvious scenarios where this is a real and realized risk, with causes outside of the control of the entity, and must be addressed.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The “approval by default” approach does not meet the FERC directive for NERC to pre-approve Corrective Action Plan extensions. The DT defers proposed comments regarding changes in the process to NERC staff.	
Joshua London - Eversource Energy - 1, Group Name Eversource	
Answer	No
Document Name	
Comment	
Eversource supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI comments.	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	

Timeliness expectations would be a significant burden on the GO and could cause unplanned outages.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
EOP-012-3 R6.2 notes footnote 11: *"Extension requests will be received and evaluated in accordance with the NERC process. The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction."* Manitoba Hydro interprets footnote 11 & 12 to exclude Canadian entities from having to request CAP extensions. Is this interpretation correct? Please advise. Manitoba Hydro recommends that for non-US Registered Entities, this additional language/guidance be added to footnote 11 and 12: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, Canadian regulators will determine applicability but footnotes have changed based on industry comments.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	

Answer	No
Document Name	
Comment	
Duke Energy does does not agree with the pre-approval process for corrective action extension. Criteria for extensions should be captured in the standard and acceptance of the extension should be evaluated as part of the audit process. Like our response for question 1, Duke Energy believes it is inappropriate for the CEA to have roles on both the enforcement and performance sides of the standard implementation. Additionally, we support the NAGF's comments on a lack of an appeals process for corrective action plan denial.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see responses to NAGF.	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI), the Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF), and the North American Generator Forum (NAGF) on question 3	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see responses to those organization’s comments.	

Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation supports the comments submitted by NAGF and EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see responses to those organization's comments.	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	No
Document Name	
Comment	
AZPS agrees with comments submitted by EEI on behalf of its members that consideration should be given to add an appeals process for a denial of a Corrective Action Plan extension request.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see responses to EEI comments.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	No
Document Name	

Comment	
TEPC agrees with EEI's comments: *there needs to be more detail defining the timelines associated with the CEA reviews and determinations*. As for Footnotes 11 and 12: These are for non US-Registered entities and should be removed.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI comments. Changes to footnotes have occurred based on industry feedback.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI comments.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	
Comment	

Dominion Energy supports the EEI comments. In addition, Dominion Energy has a concern that the appeal process is not formally outlined or appear even exist for denial of constraints by NERC staff. Also, the entire constraint review process should be formalized in a public document in either the standard itself or in the Rules of Procedure. While the draft internal NERC procedure is a good start, a formal documented and public process should be created and maintained.

Likes 0	
Dislikes 0	

Response
Thank you for your comment, please see responses to EEI comments. The DT defers proposed comments regarding changes in the process to NERC staff.

Chantal Mazza - Chantal Mazza On Behalf of: Junji Yamaguchi, Hydro-Quebec (HQ), 1, 5; Nicolas Turcotte, Hydro-Quebec (HQ), 1, 5; - Chantal Mazza	
Answer	No
Document Name	

Comment
Does the R6.2 footnote 11 exclude Canadian entities from having to request CAP extensions. Is this interpretation correct? Please advise. R6 and R7 requirements regarding pre-approval of CAPs by NERC use language that is similar to the TPL-007 standard. TPL-007 has a Canadian Variance where implementation of Corrective Action Plan(s) that require capital investment must be approved by the applicable provincial regulatory authority. This project should consider whether Canadian-specific language is needed in Requirements R6, R7 and R8 to align with the regulatory practices/processes in Canada for approving Corrective Action Plan(s) requiring capital investments. HQ supports Manitoba Hydro's comment "Manitoba Hydro recommends that for non-US Registered Entities, this additional language/guidance be added to footnote 11 and 12: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner.

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Canadian regulators will determine applicability but footnotes have changed based on industry comments.	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	No
Document Name	
Comment	
PG&E supports NAGF and EEI concerns regarding the timeline for CAPs (referenced above), as well as their suggested revisions to R7 language.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see responses to those organization's comments.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	No
Document Name	
Comment	
This approach does not take into account potential for excess outages. In addition, as explained in Response to Q2, the additional approval process needed for an extension is very inefficient and builds in potential delays that, if an extension is not approved, can set back the timing of a plan. NRG recommends that approval decisions would need to have a short mandate timeframe if they are still included in the standard.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments. The DT defers proposed comments regarding changes in the process to NERC staff.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	No
Document Name	
Comment	
This approach does not take into account potential for excess outages. In addition, as explained in Response to Q2, the additional approval process needed for an extension is very inefficient and builds in potential delays that, if an extension is not approved, can set back the timing of a plan. NRG recommends that approval decisions would need to be mandated to be made within a short timeframe if they are still included in the standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT defers proposed comments regarding changes in the process to NERC staff.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	No
Document Name	
Comment	
Tri-State supports MRO NSRF Comment.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment, please see responses to MRO NSRF comments.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
Similar to the comment on proposed R6, current proposed R7.3 requirement language does not specify when the extension requests need to be made. However, a companion document (*EOP-012-3 Constraint and CAP Process 10172024.pdf*) indicated that "*Entities are encouraged to submit the extension request as soon as they are aware they will not meet the CAP completion date but no later than **60 days** before the original required completion date.*" We would like to understand if the 60 days timeline is enforceable if it is not used within the R7 language. Furthermore, R7 language does not state what happens when the extension request is denied. Only the companion document specifies that *(If an extension request is denied, the selected actions in the Corrective Action Plan need to be completed in accordance with the original timetables.*). Again, we would like to understand if the language in the companion document is enforceable. Additionally, the reference to R2 in R7's language needs to be more specific. R2 is split into two parts – R2.1 and R2.2. Only R2.1 is allowed to have CAP. Recommend modifying the R7 language as following: *Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, **R2 Part 2.1**, or R3 shall, as applicable:*	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The DT defers proposed comments regarding changes in the process to NERC staff. The DT removed references to Requirement R2 within Requirement 7 based on industry feedback.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	

Although the changes made to Requirements R6 and R7 comply with the intent of the FERC Order, there needs to be more detail defining the timelines associated with the CEA reviews and determinations. We further ask that consideration be given to including an appeals process for a denial of a Corrective Action Plan extension. While we understand that NERC is not bound to Requirements contained in Reliability Standards, determinations that represent the denial of a CAP extension may be caused by a misunderstanding or missing information that can be resolved through an appeals process.

EEI additionally questions the value of Footnotes 11 and 12, which state that extension requests will be evaluated in accordance with NERC processes and extension requests for non US-Registered entities should be implemented in a manner consistent with the responsible government authority. Given NERC or applicable governmental authorities or agencies in non-US jurisdiction are not subject to Requirements within NERC Reliability Standards, these footnotes have no utility and should be removed.

Likes 0	
Dislikes 0	

Response

Thank you for your comment. The DT defers proposed comments regarding changes in the process to NERC staff. Footnotes have changed based on industry feedback.

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer	No
Document Name	

Comment

As stated above, the timelines for the CAPs may create a significant burden since the GO cannot simply take outages to address these issues or may face other barriers. It would be highly counterproductive regarding reliability assurance for NERC to insist that these outages must take priority over other outage work that has long been planned and is critically needed. This issue needs clarification to ensure the standard is clear and unambiguous.

The NAGF also recommends that the R7 language be modified to only refer to R2, Part 2.1 since CAP is not allowed under 2.2.	
Likes 0	
Dislikes 0	
Response	
The timelines meet the FERC directives and concern for urgency. How a GO manages outages is beyond the scope of the DT. The DT removed references to Requirement R2 within Requirement 7 based on industry feedback.	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	No
Document Name	
Comment	
Ameren agrees with NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see responses to NAGF comments	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	No
Document Name	
Comment	
Does the R6.2 footnote 11 exclude Canadian entities from having to request CAP extensions. Is this interpretation correct? Please advise. R6 and R7 requirements regarding pre-approval of CAPs by NERC use language that is similar to the TPL-007 standard. TPL-007 has a Canadian Variance where implementation of Corrective Action Plan(s) that require capital investment must be approved by the applicable	

provincial regulatory authority. This project should consider whether Canadian-specific language is needed in Requirements R6, R7 and R8 to align with the regulatory practices/processes in Canada for approving Corrective Action Plan(s) requiring capital investments. NB Power supports Manitoba Hydro's comment "Manitoba Hydro recommends that for non-US Registered Entities, this additional language/guidance be added to footnote 11 and 12: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Canadian regulators will determine applicability but footnotes have changed based on industry comments.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	
Comment	
Although the changes made to Requirements R6 and R7 comply with the intent of the FERC Order, there needs to be more detail defining the timelines associated with the CEA reviews and determinations. We further ask that consideration be given to including an appeals process for a denial of a Corrective Action Plan extension. While we understand that NERC is not bound to Requirements contained in Reliability Standards, determinations that represent the denial of a CAP extension may be caused by a misunderstanding or missing information that can be resolved through an appeals process. We additionally question the value of Footnotes 11 and 12, which state that extension requests will be evaluated in accordance with NERC processes and extension requests for non US-Registered entities should be implemented in a manner consistent with the responsible government authority. Given NERC or applicable governmental authorities or agencies in non-US jurisdiction are not subject to Requirements within NERC Reliability Standards, these footnotes have no utility and should be removed.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The DT defers proposed comments regarding changes in the process to NERC staff. Footnotes have been changed based on industry comments.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	
Although the changes made to Requirements R6 and R7 comply with the intent of the FERC Order, there needs to be more detail defining the timelines associated with the CEA reviews and determinations. We further ask that consideration be given to including an appeals process for a denial of a Corrective Action Plan extension. While we understand that NERC is not bound to Requirements contained in Reliability Standards, determinations that represent the denial of a CAP extension may be caused by a misunderstanding or missing information that can be resolved through an appeals process. EEI additionally questions the value of Footnotes 11 and 12, which state that extension requests will be evaluated in accordance with NERC processes and extension requests for non US-Registered entities should be implemented in a manner consistent with the responsible government authority. Given NERC or applicable governmental authorities or agencies in non-US jurisdiction are not subject to Requirements within NERC Reliability Standards, these footnotes have no utility and should be removed.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The DT defers proposed comments regarding changes in the process to NERC staff. Footnotes have been changed based on industry comments.	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No

Document Name	
Comment	
Vistra agrees with comments made by Duke Energy.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the responses to Duke's comments.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Recommend that any corrective action plan approval and extension that is requested be handled by a single senior management official with overall authority and responsibility for leading and managing implementation of and continuing adherence to the requirements within the NERC EOP-012 cold weather standards and not at the Compliance Enforcement Authority (CEA). The CEA will then be able to audit the process as required.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The DT defers proposed comments regarding changes in the process to NERC staff.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	

MP agrees with EEI that defining timelines associated with CEA reviews and determination and an appeals process to support denials is needed.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI comments.	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	No
Document Name	
Comment	
RF would recommend adding that the CEA will timely review the corrective action plan extensions for validity and provide the GO notice of its determination.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The DT defers proposed comments regarding changes in the process to NERC staff.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	
Comment	

Although the changes made to Requirements R6 and R7 comply with the intent of the FERC Order, there needs to be more detail defining the timelines associated with the CEA reviews and determinations. We further ask that consideration be given to including an appeals process for a denial of a Corrective Action Plan extension. While we understand that NERC is not bound to Requirements contained in Reliability Standards, determinations that represent the denial of a CAP extension may be caused by a misunderstanding or missing information that can be resolved through an appeals process.

NV Energy additionally questions the value of Footnotes 11 and 12, which state that extension requests will be evaluated in accordance with NERC processes and extension requests for non-US-Registered entities should be implemented in a manner consistent with the responsible government authority. Given NERC or applicable governmental authorities or agencies in non-US jurisdiction are not subject to Requirements within NERC Reliability Standards, these footnotes have no utility and should be removed.

Additionally, NV Energy recommends that dates for which a registered entity is to be held to must be in the Requirement.

NV Energy also recommends there be an “approval by default” if the CEA does not respond within a given period, for example 30 days after submittal to CEA.

Lastly, NV Energy recommends that the existing 60-day corrective action plan extension request have caveats for scenarios when it is not determined until within in the 60-day period that an extension is required. There are various obvious scenarios where this is a real and realized risk, with causes outside of the control of the entity, and must be addressed.

Likes 0	
Dislikes 0	

Response

Thank you for your comment. The DT defers proposed comments regarding changes in the process to NERC staff. The “approval by default” approach does not meet the FERC directive for NERC to pre-approve Corrective Action Plan extensions.

Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	
See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see responses to EEI comments.	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	No
Document Name	
Comment	
PNM agrees with the comments of Texas RE: *In Requirement Part 6.1.6, Texas RE recommends the SDT take a similar approach to PRC-004-6 Requirement R5 to ensure that applicable entities will conduct an evaluation of all similar equipment, document which equipment needs a CAP to be completed within 24 hours and which equipment does not need a CAP. Texas RE recommends the following revision:* *6.1.6 An evaluation of applicability to similar equipment freeze protection measures at generating units owned by the Generator Owner:*	

Develop a Corrective Action Plan (CAP) for the identified similar equipment freeze protection measures to be completed within 24 calendar months of the Generator Cold Weather Reliability Event; or ***Explain in a declaration why corrective actions are beyond the entity's control or would not improve BES reliability, and that no further corrective actions will be taken.*** *M6 Each Generator Owner will have documented evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event at an applicable unit in accordance with Requirement R6. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), Generator Cold Weather Constraint(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, and updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan.* ***Each Generator owner shall have dated evidence that demonstrates it developed a CAP and an evaluation of the CAP's applicability to other equipment freeze protection measures, or a declaration in accordance with Requirement Part 6.1.6.***	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see responses to Texas RE comments.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	No
Document Name	
Comment	
It appears that R7.4 should be listed as "or", or state "Document in a declaration if applicable." Southern further agrees with the EEI and NAGF comments concerning the timing and scheduling of outages to implement CAPS.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment. Please see responses to those organization's comments. 7.4	
Robert Blackney - Edison International - Southern California Edison Company - 1	
Answer	No
Document Name	
Comment	
See comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see responses to EEI comments.	
Stephanie Kenny - Edison International - Southern California Edison Company - 6	
Answer	No
Document Name	
Comment	
See EEI comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see responses to EEI comments.	
Natalie Johnson - Enel Green Power - 5	

Answer	No
Document Name	
Comment	
Enel North America agrees with the MRO NSRF's recommendation that the existing 60-day corrective action plan extension request should allow caveats for scenarios when it is not determined until within in the 60-day period that an extension is required. There are various obvious scenarios where this is a real and realized risk, with causes outside of the control of the entity, and must be addressed.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see responses to NAGF comments.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no concerns	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	

Comment	
The revised language is clear and acceptable as written.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
The SRC generally agrees with the drafting team's proposed language, and recommends the following additional revisions. First, the SRC recommends that the deadline for developing a CAP in Requirement R6 be revised from "before the first day of July" to "before the first day of ***the following*** July" to help minimize potential ambiguity regarding the CAP development deadline. Second, the SRC recommends that Part 6.2 of Requirement R6 be revised to clarify that CEA review and approval is not needed in scenarios in which the actions in the CAP need to be updated, but the updates will not require extension of the timelines in Part 6.1. The SRC therefore recommends that the beginning of Part 6.2 be revised to read as follows: "If it determines that it may need to exceed a timeline in Part 6.1, update the Corrective Action Plan . . ."	

Third, the SRC recommends including a timeline for submitting extension requests (for example, 60 days before the first deadline that would be impacted by the extension request). This would help reduce last-minute extension requests and ensure the CEA has adequate time to review and process extension requests. Finally, the SRC recommends that the beginning of Part 6.2.1 be revised to read "an explanation of the circumstances . . ." to better fit the overall structure of the list of elements of Part 6.2.	
Likes 0	
Dislikes 0	
Response	
The DT had numerous discussions regarding the points you have raised during the Standard Development process and has made changes to Requirement R6 to include industry feedback and meet the FERC directive.	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Rhonda Jones - Invenergy LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	

In Requirement Part 6.1.6, Texas RE recommends the SDT take a similar approach to PRC-004-6 Requirement R5 to ensure that applicable entities will conduct an evaluation of all similar equipment, document which equipment needs a CAP to be completed within 24 hours and which equipment does not need a CAP. Texas RE recommends the following revision:

6.1.6 An evaluation of applicability to similar equipment freeze protection measures at generating units owned by the Generator Owner:

- **Develop a Corrective Action Plan (CAP) for the identified similar equipment freeze protection measures to be completed within 24 calendar months of the Generator Cold Weather Reliability Event; or**
- **Explain in a declaration why corrective actions are beyond the entity's control or would not improve BES reliability, and that no further corrective actions will be taken.**

M6 Each Generator Owner will have documented evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event at an applicable unit in accordance with Requirement R6. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), Generator Cold Weather Constraint(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, and updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan. **Each Generator owner shall have dated evidence that demonstrates it developed a CAP and an evaluation of the CAP's applicability to other equipment freeze protection measures, or a declaration in accordance with Requirement Part 6.1.6.**

Likes 0	
Dislikes 0	
Response	

Thank you for the comments. The DT has made changes in Requirement R6.	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see responses to NAGF's comments.	
Alan Wahlstrom - Southwest Power Pool, Inc. (RTO) - NA - Not Applicable - MRO,WECC	
Answer	
Document Name	
Comment	
SPP agrees with the comments of The ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see responses to the IRC SRC comments.	

Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	
Document Name	
Comment	

OPG supports HQ comments: "The Generator Cold Weather CAP Extension and Constraint Process document should be updated to reflect Canadian-specific language regarding applicable governmental authorities, for example, similar to the language used in the footnote 11."

OPG supports Manitoba Hydro's comment recommending that for non-US Registered Entities: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner.

OPG supports BC Hydro's comment (freezing precipitation in Québec can and has occurred in March and April months) regarding Requirement "R6: Similar to previously submitted comments, in Québec, Canada, Generator Cold Weather Reliability Events such as freezing precipitation, can and have happened well into the Spring calendar months (including April and May). The requirement to develop a CAP within 150-days of the Event is reasonable. However, the first day of July deadline will considerably reduce the CAP development timeline for late Spring Events. Worst case scenario, for a May Event, identification of common failure causes, solution identification and CAP development would need to be done in less than 45 days, which may result in an inadequate CAP. The addition of the December 1 deadline to implement a CAP (R6 Part 6.1.5) would ensure that adequate CAPs are developed and implemented before the next Winter season. With the addition of the December 1 deadline, HQ recommends deleting "the first day of July" language. "

Likes 0	
Dislikes 0	

Response

Thank you for your comment. Canadian regulators will determine applicability and other adjustments as needed. The DT has deleted the July 1 out of the Requirement R6 to improve reliability.

4. In paragraph 72 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to clarify that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date. **The drafting team provided updated language in Requirement R2 Part 2.1 to address the issue of units in different stages of design and construction. February 16, 2023 was chosen as a date of demarcation as that was the date the Extreme Cold Weather Temperature was approved by FERC. Do you agree that revisions to Requirement R2 Part 2.1 address this directive? If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.**
Natalie Johnson - Enel Green Power - 5

Answer	No

Document Name	
Comment	
Enel North America agrees with EEI's response to question 4 that the date used for Requirement R2, subparts 2.1 and 2.2 for new resources should be the approval date of this Standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 12-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Stephanie Kenny - Edison International - Southern California Edison Company - 6	
Answer	No
Document Name	
Comment	
See EEI comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 12-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Robert Blackney - Edison International - Southern California Edison Company - 1	
Answer	No

Document Name	
Comment	
See comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	
Comment	
Invenergy disagrees that the revisions to Requirement 2 address the FERC directive. If the intent is for corrective action plans to be completed prior to the generating unit's commercial operation date and for the entity to have the capability to operate at the unit's ECWT for at least 12 hours, then it is unnecessary to divide this requirement into separate tracks based on the approval date of the ECWT definition. As such, we recommend returning to the language of EOP-012-2 and replacing the CAP language with constraint declaration language. If two tracks are to be pursued, then we disagree that February 16, 2023, is the most reasonable date of demarcation to address the issue of units in different stages of design and construction and instead proposes October 1, 2024. The effective date of EOP-012-2 presents as a more reasonable alternative by which industry would have received sufficient notice of the approval of the ECWT definition and had an opportunity to calculate that value for incorporation in the design criteria of new generating units.	
Likes 0	
Dislikes 0	

Response
Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 12-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.

Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	

Comment
Invenergy disagrees that the revisions to Requirement 2 address the FERC directive. If the intent is for corrective action plans to be completed prior to the generating unit's commercial operation date and for the entity to have the capability to operate at the unit's ECWT for at least 12 hours, then it is unnecessary to divide this requirement into separate tracks based on the approval date of the ECWT definition. As such, we recommend returning to the language of EOP-012-2 and replacing the CAP language with constraint declaration language. If two tracks are to be pursued, then we disagree that February 16, 2023, is the most reasonable date of demarcation to address the issue of units in different stages of design and construction and instead proposes October 1, 2024. The effective date of EOP-012-2 presents as a more reasonable alternative by which industry would have received sufficient notice of the approval of the ECWT definition and had an opportunity to calculate that value for incorporation in the design criteria of new generating units.

Likes 0	
Dislikes 0	

Response
Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 12-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.

Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC

Answer	No
Document Name	
Comment	
PNM agrees with the comments of EEI: *While EEI appreciates the intent of the February 16, 2023, date, we do not agree that compliance date should be aligned to when a glossary term is approved. We also note that there are other changes within the proposed standard that could impact what an entity includes in the design of their resource beyond the definition of Extreme Cold Weather Temperature, including the proposed definition of Generator Cold Weather Constraint. For this reason, we ask that the date used for Requirement R2, subparts 2.1 and 2.2 for new resources should be the approval of this Standard. NERC Reliability Standards should be forward looking and should not be aligned to compliance measures or dates from previous versions of Reliability Standards or approval dates of Glossary Terms.*	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Requirement R2, subparts 2.1 and 2.2 erewere changed to JuneJune 29, 2023 to align with the rehearing date of EOP-0012-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	
See EEI Comments	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 12-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	
Comment	
While NV Energy appreciates the intent of the February 16, 2023, date, we do not agree that compliance date should be aligned to when a glossary term is approved. We also note that there are other changes within the proposed standard that could impact what an entity includes in the design of their resource beyond the definition of Extreme Cold Weather Temperature, including the proposed definition of Generator Cold Weather Constraint. For this reason, we ask that the date used for Requirement R2, subparts 2.1 and 2.2 for new resources should be the approval of this Standard. NERC Reliability Standards should be forward looking and should not be aligned to compliance measures or dates from previous versions of Reliability Standards or approval dates of Glossary Terms.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 2. 2 erewere changed to June 29, 2023 to align with the rehearing date of EOP-0012-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	

Reclamation agrees that revisions to Requirement R2 Part 2.1 addresses the FERC directive for units under construction. However, Reclamation does not agree with including the 20 MPH as a criterion unless an analysis/justification for the 20 MPH windspeed that would affect equipment in a negative way can be provided.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. This is not within the SAR scope of this drafting team to address. The DT did add some language regarding wind speed within the Technical Rationale.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	
While EEI appreciates the intent of the February 16, 2023, date, we do not agree that compliance date should be aligned to when a glossary term is approved. We also note that there are other changes within the proposed standard that could impact what an entity includes in the design of their resource beyond the definition of Extreme Cold Weather Temperature, including the proposed definition of Generator Cold Weather Constraint. For this reason, we ask that the date used for Requirement R2, subparts 2.1 and 2.2 for new resources should be the approval of this Standard. NERC Reliability Standards should be forward looking and should not be aligned to compliance measures or dates from previous versions of Reliability Standards or approval dates of Glossary Terms.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 2. 2 erewere changed to June 29,2023 to align with the rehearing date for EOP-0012-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	

Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	
Comment	
While we appreciate the intent of the February 16, 2023, date, we do not agree that compliance date should be aligned to when a glossary term is approved. We also note that there are other changes within the proposed standard that could impact what an entity includes in the design of their resource beyond the definition of Extreme Cold Weather Temperature, including the proposed definition of Generator Cold Weather Constraint. For this reason, we ask that the date used for Requirement R2, subparts 2.1 and 2.2 for new resources should be the approval of this Standard. NERC Reliability Standards should be forward looking and should not be aligned to compliance measures or dates from previous versions of Reliability Standards or approval dates of Glossary Terms.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 were changed to June 29, 2023 to align with the rehearing date of EOP-012-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	No
Document Name	
Comment	
There is no reason to split the language into two parts around February 16, 2023. Requirement R2 will only apply once the unit is in commercial operation, and a corrective action plan for freeze protection measures that is required to be completed prior to commercial operation is not really different from simply requiring the freeze protection measures to be in place as of the date of commercial operation.	

The language in R2 should be updated to provide 32 km/hr as an equivalent wind speed to 20 mph." NB Power supports BC Hydro's comments: "Under Requirement R2, BC Hydro recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada." The date of February 16, 2023, when the definition of Extreme Cold Weather Temperature was approved by FERC it is not equivalent with a compliance requirement, unless accompanied by an applicable effective standard. The recommendation is to use instead the effective date for the new EOP-012-3 to be enforceable for non-US entities, as applicability criteria for the Generator Owner first contractual commitment to design criteria.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 2.22 were changed to June 29,2023 to align with the rehearing date of EOP-012-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	No
Document Name	
Comment	
Ameren agrees with EEI's comments.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment.Please see repsonsen to EEI.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
As drafted, it is unclear if a unit constructed after 2027 would be in violation of R2 if it experiences a Generator Cold Weather Reliability Event. As an example, if the new unit is built with the design specified to be to -10 deg F and a 20-mph wind where the ECWT is 0, is there a violation if a GCWRE occurs and the cause is determined to be an error in the calculation made by the construction engineer? Or is the fact that you have a document that says the design should meet the ECWT plus 20 mph wind sufficient for compliance with R2, regardless of performance?	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. If a freezing event occurs, a CAP will need to be developed and completed in accordance with Requirement R6. The recalculation will require that a CAP be developed within 6 months. Errors in ECWT calculation are not addressed by the standard. The DT does not determine compliance with the Standard. Requirement R6 is clear in that if a Generator Cold Weather Reliability Event occurs, a Corrective Action Plan would be developed, which includes the summary of identified causes of the Generator Cold Weather Reliability Event. The purpose of the Standard is to address mitigating reliability impacts of extreme cold weather on generating units so performance of the generating unit should be the focus of each Generator Owner. Requirement R2 is focused on providing the capability to operate at the ECWT and, while a Generator Cold Weather Reliability Event may occur, the intent of the actions within the Requirements is that the quantity of those events will be minimized.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	

While Avista appreciates the intent of the February 16, 2023, date, we do not agree that compliance date should be aligned to when a glossary term is approved. We also note that there are other changes within the proposed standard that could impact what an entity includes in the design of their resource beyond the definition of Extreme Cold Weather Temperature, including the proposed definition of Generator Cold Weather Constraint. For this reason, we ask that the date used for Requirement R2, subparts 2.1 and 2.2 for new resources should be the approval of this Standard. NERC Reliability Standards should be forward looking and should not be aligned to compliance measures or dates from previous versions of Reliability Standards or approval dates of Glossary Terms.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 were changed to June 29,2023 to align with the rehearing date of EOP-012-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
AES US Renewables believe the February 16, 2023 date should not be used as demarcation. Typically, once FERC approves a standard, there is a period prior to the standard becoming enforceable. Using the FERC approval date does not follow the typical implementation process and is unreasonable. Instead it should follow the EOP-012-1 Implementation Plan that was part of the package that was approved by FERC on 2/16/2023. Per the Implementation Plan, EOP-012-1 along with the definitions of three new terms were supposed to become effective on 10/1/2024. We strongly recommend using 10/1/2024 as the demarcation date.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 12-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Chantal Mazza - Chantal Mazza On Behalf of: Junji Yamaguchi, Hydro-Quebec (HQ), 1, 5; Nicolas Turcotte, Hydro-Quebec (HQ), 1, 5; - Chantal Mazza	
Answer	No
Document Name	
Comment	
HQ support NB Power's comment: "There is no reason to split the language into two parts around February 16, 2023. Requirement R2 will only apply once the unit is in commercial operation, and a corrective action plan for freeze protection measures that is required to be completed prior to commercial operation is not really different from simply requiring the freeze protection measures to be in place as of the date of commercial operation. As an aside, the language in R2 should be updated to provide 32 km/hr as an equivalent wind speed to 20 mph." HQ offers the following comment: "Under Requirement R2, we recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which ECWT definition becomes effective in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada."	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 12-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	

Comment	
Dominion Energy supports EEi comments but would like to clarify that an effective date dependent on a term pending stakeholder approval is not tenable. Effective dates should occur after stakeholders are aware of the requirements and what defined terms mean.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 12-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 12-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	No
Document Name	

Comment	
TEPC agrees with EEI's comments: *we ask that the date used for Requirement R2, subparts 2.1 and 2.2 for new resources should be the approval of this Standard. NERC Reliability Standards should be forward looking and should not be aligned to compliance measures or dates from previous versions of Reliability Standards or approval dates of Glossary Terms.*	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 22.2 were changed to June 29, 2023 to align with the rehearing date of EOP-0012-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	No
Document Name	
Comment	
AZPS agrees with EEI's comments submitted on behalf of its members that the effective date of this Standard would be a more suitable choice as the date of demarcation. AZPS agrees with EEI that NERC Reliability Standards should be forward looking and not be aligned to dates in the past.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 erewere changed to June 29,2023 to align with the rehearing date of EO-00 12-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	

Answer	No
Document Name	
Comment	
Black Hills Corporation supports the comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI's comment.	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and the Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) on question 4	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to NAGF and EEI's comment.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	

Comment
Manitoba Hydro support Hydro Quebec's comment: "There is no reason to split the language into two parts around February 16, 2023. Requirement R2 will only apply once the unit is in commercial operation, and a corrective action plan for freeze protection measures that is required to be completed prior to commercial operation is not really different from simply requiring the freeze protection measures to be in place as of the date of commercial operation. As an aside, the language in R2 should be updated to provide 32 km/hr as an equivalent wind speed to 20 mph." Manitoba Hydro supports BC Hydro's comments: "Under Requirement R2, BC Hydro recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada."

Likes 0	
Dislikes 0	

Response
Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 12-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.

Joshua London - Eversource Energy - 1, Group Name Eversource

Answer	No
Document Name	

Comment
Eversource supports the comments of EEI.

Likes 0	
Dislikes 0	

Response	
Thank you for your comment. See response to EEI's comment.	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	No
Document Name	
Comment	
Under Requirement R2, BC Hydro recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 12-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction Added 32 km/hr to standard language.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	
The date used should be the NERC effective date of the ECWT.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 12-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
It is the opinion of ACES that the second bullet point of Requirement 2, Part 2.1 would be clearer if the phrase “upon beginning commercial operation” were changed to “prior to beginning commercial operation”.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The DT updated this wording to have a CAP developed, implemented, and complete by April 1, 2028, which is 3 years plus 6 months after the effective date of EOP 12-2.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
The revised language is clear and acceptable as written.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	
NRG does not have any concern with the designation of Feb 16, 2023 as the date of demarcation for when the corrective actions would be required for units that achieve commercial operation after Oct 1, 2027. NRG believes that the sub bullet for documenting a declaration with justification for a Generator Cold Weather Constraint should be applicable to R2.1 as well as R2.2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SAR and Directives do not allow for constraint declarations for this requirement.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
NRG does not have any concern with the designation of Feb 16, 2023 as the date of demarcation for when the corrective actions would be required for units that achieve commercial operation after Oct 1, 2027. NRG believes that the sub bullet for documenting a declaration with justification for a Generator Cold Weather Constraint should be applicable to R2.1 as well as R2.2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SAR and Directives do not allow for constraint declarations for this requirement.	

Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	Yes
Document Name	
Comment	
PG&E agrees that this DT draft clarifies that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	

Comment	
FirstEnergy has no concerns.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	
Document Name	
Comment	

OPG support NB Power's comment: "There is no reason to split the language into two parts around February 16, 2023. Requirement R2 will only apply once the unit is in commercial operation, and a corrective action plan for freeze protection measures that is required to be completed prior to commercial operation is not really different from simply requiring the freeze protection measures to be in place as of the date of commercial operation. As an aside, the language in R2 should be updated to provide 32 km/hr as an equivalent wind speed to 20 mph."

OPG support HQ comment: "Under Requirement R2, we recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which ECWT definition becomes effective in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada."

OPG has the following alternative comment:

The date of February 16, 2023, when the definition of Extreme Cold Weather Temperature was approved by FERC it is not equivalent with a compliance requirement, unless accompanied by an applicable effective standard. The recommendation is to use instead the effective date for the new EOP-012-3 to be enforceable for non-US entities, as applicability criteria for the Generator Owner first contractual commitment to design criteria.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 erewere changed to June 29, 2023 to align with the rehearingl date of EOP-0012-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 were changed to June 29, 2023 to align with the rehearingl date of EOP-012-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	

Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	

Texas RE has the following comments on Requirement R2:

Texas RE suggests a grammatical review be conducted for the second bullet in Requirement Part 2.1. It looks like there either a misplaced parenthetical or it needs a closing parenthetical, or it needs an “or” or an “and” after the first comma.

Texas RE is concerned that the measures do not require dated evidence for demonstrating contractual design criteria commitment before February 16, 2023. Texas RE recommends the following revision to the measure (in bold):

M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its unit(s) in accordance with R2, or it has developed a Corrective Action Plan or declared a Generator Cold Weather Constraint for the identified issues. **Each GO shall have dated evidence that demonstrates the signed contractual design criteria commitments in accordance with 2.1 and/or 2.2.** Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature under Requirement R1 Part 1.2.2 which is equal to or less than the unit’s Extreme Cold Weather Temperature, documentation of freeze protection measures, Corrective Action Plan(s) (if applicable), and Generator Cold Weather Constraints (if applicable).

Likes 1	JEA, 1, McClung Joseph
Dislikes 0	

Response
Thank you for your comment. The DT incorporated these minor edits. Dated evidence is addressed in the measurement of these requirements.

5. In paragraph 72 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to clarify that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

The drafting team provided updated language in Requirement R2 Part 2.2 to address the issue of units in newer stages of design and construction. February 16, 2023 was chosen as a date of demarcation as that was the date the Extreme Cold Weather Temperature was approved by FERC. Units committed to design criteria on or after February 16, 2023 do not have the option to utilize a Corrective Action Plan but may still declare a Generator Cold Weather Constraint. Do you agree that revisions to Requirement R2 Part 2.2 address this directive? If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	No
Document Name	
Comment	
Under Requirement R2, BC Hydro recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada.	
Likes 0	
Dislikes 0	
Response	

Thank you for the response. The DT has made changes to your comment. Requirement R2 based on industry comments., subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 012-1.	
Joshua London - Eversource Energy - 1, Group Name Eversource	
Answer	No
Document Name	
Comment	
Eversource supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI's comments.EEI.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Manitoba Hydro supports BC Hydro's comments: "Under Requirement R2, BC Hydro recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada."	
Likes 0	
Dislikes 0	
Response	

Please see response to BC Hydro's comments.Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 012-1.	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and the Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) on question 5	
Likes 0	
Dislikes 0	
Response	
Please see responses to those organization's comments.EEI and MRO NSRF.	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation supports the comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI's comments.EEI.	

Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	No
Document Name	
Comment	
AZPS does not agree per the same comment as question number 4	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to question number 4.Q4.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	No
Document Name	
Comment	
TEPC agrees with EEI's comments: *we do not agree that compliance date should be aligned to when a glossary term is approved. We also note that there are other changes within the proposed standard that could impact what an entity includes in the design of their resource beyond the definition of Extreme Cold Weather Temperature, including the proposed definition of Generator Cold Weather Constraint*.	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI's comments.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No

Document Name	
Comment	
WEC Energy Group supports the comments of EEI as stated in response to Question 4.	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI's comments.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	
Comment	
See comments to Q4 please.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to question number 4Q4.	
Chantal Mazza - Chantal Mazza On Behalf of: Junji Yamaguchi, Hydro-Quebec (HQ), 1, 5; Nicolas Turcotte, Hydro-Quebec (HQ), 1, 5; - Chantal Mazza	
Answer	No
Document Name	
Comment	

HQ supports BC Hydro's comments: "Under Requirement R2, BC Hydro recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada." HQ supports NB Power's comment: "The second option in Part 2.2 opens the possibility of a Generator Cold Weather Constraint, including a pre-approving constraints based on criteria in Attachment 1 that may not be appropriate in the future. Future units should simply be engineered to provide the required freeze protection measures. If there is any need for exceptions, they should be handled on a case-by-case basis. As an aside, the language in R2 should be updated to provide 32 km/hr as an equivalent wind speed to 20 mph."	
Likes 0	
Dislikes 0	
Response	
Please see responses to those organization's comments.Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 012-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
AES US Renewables agree with the proposed revision. However, we do not agree with the demarcation date. Please refer to our response to Question 4.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. Please see response to question number 4.Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 012-1.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	
Avista does not support the February 16, 2023, date for the reasons given to our response in Question 4.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to question number 4. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 012-1.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
Same comment as for question 4 above.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to question number 4.Q4.	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	

Answer	No
Document Name	
Comment	
Ameren agrees with EEI's comments.	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI’s comments. Thank you for your comment. Please see response to EEI.	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	No
Document Name	
Comment	
NB Power supports BC Hydro’s comments: “Under Requirement R2, BC Hydro recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording “date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction.” This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada.” The second option in Part 2.2 opens the possibility of a Generator Cold Weather Constraint, including a pre-approving constraints based on criteria in Attachment 1 that may not be appropriate in the future. Future units should simply be engineered to provide the required freeze protection measures. If there is any need for exceptions, they should be handled on a case-by-case basis. The language in R2 should be updated to provide 32 km/hr as an equivalent wind speed to 20 mph.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity. Requirement R2, subparts 2.1 and 2 was changed to 6/29/2023 to align with the approval date of EOP 12-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	
Comment	
We do not support the February 16, 2023, date for the reasons given to our response in Question 4.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to question number 4. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 012-1.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	
EEI does not support the February 16, 2023, date for the reasons given to our response in Question 4.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment. Please see response to question number 4.Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 012-1.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation does not agree and refers back to the answer in #2 and #4 above.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to questions number 2Q2 and 4.Q4. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 012-1.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	
Comment	
NV Energy does not support the February 16, 2023, date for the reasons given to our response in Question 4.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. Please see response to question number 4.Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 012-1.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	
See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI's comments.EEI.	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	No
Document Name	
Comment	
Response given to question 4	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to question number 4.Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 012-1.	
Colin Chilcoat - Invenergy LLC - 6	

Answer	No
Document Name	
Comment	

Invenergy disagrees that the revisions to Requirement 2 address the FERC directive. If the intent is for corrective action plans to be completed prior to the generating unit's commercial operation date and for the entity to have the capability to operate at the unit's ECWT for at least 12 hours, then it is unnecessary to divide this requirement into separate tracks based on the approval date of the ECWT definition. As such, we recommend returning to the language of EOP-012-2 and replacing the CAP language with constraint declaration language.

If two tracks are to be pursued, then we disagree that February 16, 2023, is the most reasonable date of demarcation to address the issue of units in different stages of design and construction and instead proposes October 1, 2024.

The effective date of EOP-012-2 presents as a more reasonable alternative by which industry would have received sufficient notice of the approval of the ECWT definition and had an opportunity to calculate that value for incorporation in the design criteria of new generating units.

Likes 0	
Dislikes 0	

Response

Thank you for the comments. The DT is trying to meet the FERC directives provided in a manner that allows some flexibility for those units already being designed and constructed while setting the expectations for units that have not begun the process. Bifurcation was deemed a reasonable approach and changes have been made based on industry comment. The ECWT definition was a known quantity when voted on and approved by the NERC Board in February of 2022. Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity. Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 012-1.

Rhonda Jones - Invenergy LLC - 5

Answer	No
Document Name	
Comment	
Invenergy disagrees that the revisions to Requirement 2 address the FERC directive. If the intent is for corrective action plans to be completed prior to the generating unit's commercial operation date and for the entity to have the capability to operate at the unit's ECWT for at least 12 hours, then it is unnecessary to divide this requirement into separate tracks based on the approval date of the ECWT definition. As such, we recommend returning to the language of EOP-012-2 and replacing the CAP language with constraint declaration language. If two tracks are to be pursued, then we disagree that February 16, 2023, is the most reasonable date of demarcation to address the issue of units in different stages of design and construction and instead proposes October 1, 2024. The effective date of EOP-012-2 presents as a more reasonable alternative by which industry would have received sufficient notice of the approval of the ECWT definition and had an opportunity to calculate that value for incorporation in the design criteria of new generating units.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comments. The DT is trying to meet the FERC directives provided in a manner that allows some flexibility for those units already being designed and constructed while setting the expectations for units that have not begun the process. Bifurcation was deemed a reasonable approach and changes have been made based on industry comment. The ECWT definition was a known quantity when voted on and approved by the NERC Board in February of 2022.Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity. Thank you for your comment. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 012-1.	
Robert Blackney - Edison International - Southern California Edison Company - 1	
Answer	No

Document Name	
Comment	
See comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI's comments.Thank you for your comment. Please see response to EEI.	
Stephanie Kenny - Edison International - Southern California Edison Company - 6	
Answer	No
Document Name	
Comment	
See EEI comments	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI's comments.Thank you for your comment. Please see response to EEI.	
Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	
Comment	

Enel North America agrees with EEI's comments.	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI's comments.Thank you for your comment.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no concerns.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	

Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	Yes
Document Name	
Comment	
PG&E agrees that this DT draft clarifies that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
The revised language is clear and acceptable as written.	
Likes 0	
Dislikes 0	
Response	

Thank you for your support on behalf of the Drafting Team.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
The SRC recommends that the upcoming technical conference include discussion of the extent to which it is appropriate to allow constraints under Part 2.2 of Requirement R2, as the units described in Part 2.2 should generally be designed and constructed to achieve the necessary level of extreme cold weather performance, and the standard should incentivize the development of more effective freeze protection measures over the course of time. If the discussion indicates that there is a technical basis for allowing constraints for this category of units, it should also address whether these units should qualify for all of the constraint criteria listed in Attachment 1 or only a subset of the criteria. Subject to any additional information that may become available at the technical conference, the SRC recommends that if constraints are allowed for the units described in Part 2.2 of Requirement R2, these units should only be eligible to declare constraints under item 5 of the case-by-case constraint list. In light of the goal of incentivizing development of more effective freeze protection measures, the SRC believes the accelerated review process used for the accelerated approval constraint list is not appropriate for the units described in Part 2.2. Any constraint declared by a Part 2.2 unit should be reviewed under item 5 of the case-by-case constraint list, even if the constraint might otherwise fall under the accelerated approval constraint list.	
Likes 0	
Dislikes 0	
Response	
Thnak you for your comments.Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity.	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support on behalf of the Drafting Team.	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	
Diana Torres - Imperial Irrigation District - 6	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support on behalf of the Drafting Team.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support on behalf of the Drafting Team.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
Texas RE recommends clarifying some of the footnotes: • Footnote 1 - Reword to remove “this designation”. Texas RE suggests the following verbiage: “COD means that the facility has received all approvals necessary for operation after completion of initial start-up testing.” • Footnotes 3 and 5 - Include the word “dated”. Texas RE suggests the following verbiage: “Such commitments would be demonstrated by dated and signed contractual commitments, **dated** emailed correspondence agreeing to thermal design criteria, or other similar dated documented evidence.” • In Footnotes 4 and 6, Texas RE recommends the date be clearer. As it is currently written, it is referring to the date of the governmental authority’s order. Is this the intent? If the intent is to refer to the effective date of the definitions, it should state that and reference the implementation plan.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	
Document Name	
Comment	
The date used should be the NERC effective date of the ECWT.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Requirement R2, subparts 2.1 and 2.2 was changed to 6/29/2023 to align with the approval date of EOP 012-1.	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. Please see response to NAGF's comments.NAGF.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	
Document Name	
Comment	
NA	
Likes 0	
Dislikes 0	
Response	
Thank you on behalf of the Drafting Team.	
Alan Wahlstrom - Southwest Power Pool, Inc. (RTO) - NA - Not Applicable - MRO,WECC	
Answer	
Document Name	
Comment	
SPP agrees with the comments of The ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to IRC SRC comments.ISO/RTO Council.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	
Document Name	

Comment
OPG supports BC Hydro's comments: "Under Requirement R2, BC Hydro recommends that instead of referencing the February 16, 2023 date in the Requirement and having a footnote, remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction." This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada." OPG supports NB Power's comment: "The second option in Part 2.2 opens the possibility of a Generator Cold Weather Constraint, including a pre-approving constraints based on criteria in Attachment 1 that may not be appropriate in the future. Future units should simply be engineered to provide the required freeze protection measures. If there is any need for exceptions, they should be handled on a case-by-case basis. As an aside, the language in R2 should be updated to provide 32 km/hr as an equivalent wind speed to 20 mph." OPG has the following alternative comment: The date of February 16, 2023, when the definition of Extreme Cold Weather Temperature was approved by FERC it is not equivalent with a compliance requirement, unless accompanied by an applicable effective standard. The recommendation is to use instead the effective date for the new EOP-012-3 to be enforceable for non-US entities, as applicability criteria for the Generator Owner first contractual commitment to design criteria.

Likes 0	
Dislikes 0	

Response
Please see reposnses to those organizations comments.Thank you for your comment. The Drafting Team appreciates the constructive feedback and suggested language offered by several industry organizations and has modified the standard to improve clarity. Requirement R2, subparts 2.1 and 2.was changed to 6/29/2023 to align with the approval date of EOP 12-1. 32 km/hr was added to the requirement language and the footnote was updated to reflect approval date within the appropriate jurisdiction.

Wayne Guttormson - SaskPower - 1	
Answer	
Document Name	

Comment	
Support BC Hydro's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to BC Hydro’s comments.	

6. In paragraph 76 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to address certain ambiguities by expanding on Requirement R7.1.1 and 7.1.2 to make it clear which corrective action plan implementation deadline applies when a generator owner must implement both remedying issues with existing and installing new freeze protection measures.

The drafting team clarified Requirement R7 for Corrective Action Plans developed in accordance with Requirements R1, R2, or R3. Do you agree that revisions to Requirement R7 address this directive to differentiate between the existing and new freeze protection

measures? If you do not agree but believe the directive can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	No
Document Name	
Comment	

We at ACES understand the difficulty faced by the drafting team in complying with this FERC directive. We especially appreciate the effort taken by the drafting team to limit the scope of the changes while also complying with the FERC directive. However, we feel as though the addition to the language of part 7.1.1 creates more confusion than it remedies. We recommend that the drafting team consider other alternatives such as adding an additional sub-part to both Part 7.1.1 and Part 7.1.2.

We recommend modifying Requirement R7, Part 7.1as follows:

R7. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, or R3 shall, as applicable:

7.1 Include a timetable for implementing the applicable type(s) of corrective action(s) that shall:

7.1.1. List modification(s) to existing (or previously planned pursuant to Requirement 2, Part 2.1) freeze protection measures, if any;

7.1.1.1. Any item listed in accordance with Part 7.1.1 shall be completed within 24 calendar months of completing development of the Corrective Action Plan.

7.1.2. List new freeze protection measures, if any, and

7.1.2.1 Any item listed in accordance with Part 7.1.2 shall be completed within 48 calendar months of completing development of the Corrective Action Plan.

7.1.3. Describe the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures.

Likes 0	

Dislikes 0	
Response	
Thank you for your comments. The DT made modifications to both R2 and R7 to provide the additional clarity related to industry's concern. Requirement R7 is no longer applicable to Requirement R2 CAPs. Requirement R2 was modified to include the applicable activities and clear due dates based on contractually committed design criteria dates.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	
See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. See response to EEI's comment.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation agrees that this addresses FERC's directive, but does not agree that this is the appropriate avenue. It places undue administrative burden on both facilities and CEA's without providing adequate solutions to the underlying issues of effective freeze prevention equipment.	
Likes 0	
Dislikes 0	

Response
Thank you for your comments. The DT made modifications to both R2 and R7 to provide the additional clarity related to industry's concern. Requirement R7 is no longer applicable to Requirement R2 CAPs. Requirement R2 was modified to include the applicable activities and clear due dates based on contractually committed design criteria dates. Additionally, R7 was modified to provide additional clarity related to separation of new freeze protection measures and existing freeze protection measures.

Jeffrey Streifling - NB Power Corporation - 1	
Answer	No
Document Name	
Comment	
It might have been clearer to keep the standard, including R7, focussedfocused on new units and freeze control measures and put requirements for retrofitting existing units in the implementation plan.	
Likes 0	
Dislikes 0	

Response
Thank you for your comments. The DT made modifications to Requirement R7 to provide additional clarity related to separation of new freeze protection measures and existing freeze protection measures.

Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	No
Document Name	
Comment	
The 3 types of items required to complete a Corrective Action Plan (CAP) under R1, R2 and R3 are the same 3 types of items required to complete a Corrective Action Plan under R6, qualified personnel, proper materials, and the required plant conditions. A Cold Weather Reliability Event does not change the circumstances required to correct the cause. Evidence to support implementation timelines should be retained for following audits of the Standard.	

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The DT made modifications to both Requirements R2 and R7 to provide the additional clarity related to industry's concern. R7 is no longer applicable to R2 CAPs. Requirement R2 was modified to include the applicable activities and clear due dates based on contractually committed design criteria dates.

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	No
Document Name	

Comment
Requirement R7: in Parts 7.1.1 and 7.1.2 the current wording " list the action(s) … to be completed" can be seen as ambiguous as to which actions need to be listed, i.e. whether all actions need to be planned for completion within in the specified timeframe, or whether only those actions planned to be completed in the timeframe would need to be listed. As well, in Part 7.1.1 adding the "regardless of any longer timelines in … associated with new freeze protection measures;" may add ambiguity, i.e. 7.1.2 is for new FPM so adding this to existing FPM could cause confusion on expectations. As well, in Part 7.1.2, the wording "List the action(s) which require(s) new freeze protection measures …" is ambiguous and could be interpreted as listing items such as, Needing a CAP due to a recalculated Temperature per Part 1.1.1, as opposed to actions to implement such as, Select vendor to supply new FPM. BC Hydro recommends revising R7 and Parts 7.1 with its subparts 7.1.1 through 7.1.3 for clarity. Please see suggested wording below: R7. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, or R3, shall: 7.1. Include a timetable for implementing the Corrective Action Plan that: 7.1.1. For remediating issues with existing freeze protection measures, if any, the corrective actions shall be completed within 24 calendar months of completing development of the Corrective Action Plan; and

7.1.2. For adding new freeze protection measures, if any, the corrective actions shall be completed within 48 calendar months of completing development of the Corrective Action Plan; and 7.2. Contain a description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT made modifications to R7 to provide some additional clarity. 7.1.1 is specific to the new freeze protection measures and 7.1.2 is specific to existing freeze protection measures.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Natalie Johnson - Enel Green Power - 5	
Answer	Yes
Document Name	
Comment	

Enel North America agrees with EEI's and NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support. Please see responses to those organization’s comments.	
Stephanie Kenny - Edison International - Southern California Edison Company - 6	
Answer	Yes
Document Name	
Comment	
See EEI comments	
Likes 0	
Dislikes 0	
Response	
Please see the response to EEI’s comment.	
Robert Blackney - Edison International - Southern California Edison Company - 1	
Answer	Yes
Document Name	
Comment	
See comments submitted by EEI.	
Likes 0	
Dislikes 0	

Response	
Please see the response to EEI's comment.	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	Yes
Document Name	
Comment	
Perhaps, the standard drafting team creates a form to be included and completed in the attachments as the formatting of a corrective action plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT made modifications to both R2 and R7 to provide the additional clarity related to industry's concern. Requirement R7 is no longer applicable to R2 CAPs and R2 was modified to include the applicable activities and clear due dates based on contractually committed design criteria dates. Additionally, R7.1.1 was modified to be specificspecific to the new freeze protection measures and 7.1.2 was modified to be specific to existing freeze protection measures. And R6 was modified to provide additional details and clarity related to developing Corrective Action Plans.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
NV Energy supports the proposed changes to Requirement R7, and we agree that these changes address the directive to differentiate between the existing and new freeze protection measures.	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
MP supports the proposed changes to Requirement R7, and we agree that these changes address the directive to differentiate between the existing and new freeze protection measures.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI supports the proposed changes to Requirement R7, and we agree that these changes address the directive to differentiate between the existing and new freeze protection measures.	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	
Comment	
We support the proposed changes to Requirement R7, and we agree that these changes address the directive to differentiate between the existing and new freeze protection measures.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
The revised language is clear and acceptable as written.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	Yes

Document Name	
Comment	
Ameren agrees with EEI's and NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. See the response to EEI and NAGF’s comment.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Avista supports the proposed changes to Requirement R7, and we agree that these changes address the directive to differentiate between the existing and new freeze protection measures.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	

NRG believes the language used here is clear.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
NRG believes the language used here is clear.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	Yes
Document Name	
Comment	
PG&E agrees that revisions to Requirement R7 address the directive to differentiate between the existing and new freeze protection measures.	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	
WEC Energy Group supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. See the response to EEI's comment.	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
AZPS agrees with these changes.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no concerns.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Rhonda Jones - Invenergy LLC - 5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Joshua London - Eversource Energy - 1, Group Name Eversource	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. See the response to NAGF's comment.	

7. The drafting team provided language in the Implementation Plan to address parts 3 through 5 of paragraph 4 of the June 2024 Order addressing FERC's concerns regarding urgency. The Standard language updates were written to meet the core directives in an effective and efficient manner while providing language that is objective, unambiguous, and auditable. With EOP-012-2 already effective October 1, 2024 (with the exception of Requirement R3), the changes made were intended to meet the FERC Directives without adding significantly to the efforts already in progress. Do you agree that the associated Implementation Plan meets the Directives? If you do not agree but believe the Directives can be addressed in an equally effective and efficient manner, please provide your suggestions in the form of specific language changes for the drafting team.

Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	
The current implementation plan would require a resubmission of any declaration under EOP-012-2. This would create redundant work and confusion around tracking. Suggest adding language a "grandfathering" process for existing units.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Under EOP-012-2, the GO has no obligation to submit the Generator Cold Weather Constraint Declaration. EOP-012-2 Requirement R8 simply requires the GO to review the declaration on a 5-year periodicity and update any operating limitations that result from the constraint. Based on the FERC Directives, the DT revised EOP-012-3 R8 to require the submission of any Generator Cold Weather Constraint Declaration to the CEA. Attachment 1 was created, and additionally modified, to provide better clarity to GO's on identifying Generator Cold Weather Constraints. GO's may be required to modify any constraints declared under EOP-012-2 to comply with Attachment 1 but all GO's will be required to submit any existing declarations in order for the CEA to review and follow the FERC required approval process. The CEA cannot apply EOP-012-3 criteria to an EOP-012-2 constraint during the period between October 1, 2024 and the effective date of EOP-012-3.	

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
Duke Energy agrees with and supports the NAGF's response to question 7.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Under EOP-012-2, the GO has no obligation to submit the Generator Cold Weather Constraint Declaration. EOP-012-2 Requirement R8 simply requires the GO to review the declaration on a 5-year periodicity and update any operating limitations that result from the constraint. Based on the FERC Directives, the DT revised EOP-012-3 R8 to require the submission of any Generator Cold Weather Constraint Declaration to the CEA. Attachment 1 was created, and additionally modified, to provide better clarity to GO's on identifying Generator Cold Weather Constraints. GO's may be required to modify any constraints declared under EOP-012-2 to comply with Attachment 1 but all GO's will be required to submit any existing declarations in order for the CEA to review and follow the FERC required approval process. The CEA cannot apply EOP-012-3 criteria to an EOP-012-2 constraint during the period between October 1, 2024 and the effective date of EOP-012-3. The DT made significant modifications, based on industry feedback, to the CAP language and the Generator Cold Weather Constraint Declaration language. While the modifications were based on industry feedback, the underlying requirements are based on the FERC Directive(s). Additionally, the DT made significant modifications to R6 and the CAP process, including better separation of CAPs for units that actually experience a Generator Cold Weather Reliability Event and the review of applicability on similar equipment at other generating units.	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	No
Document Name	
Comment	

Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and the North American Generator Forum (NAGF) on question 7	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Under EOP-012-2, the GO has no obligation to submit the Generator Cold Weather Constraint Declaration. EOP-012-2 Requirement R8 simply requires the GO to review the declaration on a 5-year periodicity and update any operating limitations that result from the constraint. Based on the FERC Directives, the DT revised EOP-012-3 R8 to require the submission of any Generator Cold Weather Constraint Declaration to the CEA. Attachment 1 was created, and additionally modified, to provide better clarity to GO's on identifying Generator Cold Weather Constraints. GO's may be required to modify any constraints declared under EOP-012-2 to comply with Attachment 1 but all GO's will be required to submit any existing declarations in order for the CEA to review and follow the FERC required approval process. The CEA cannot apply EOP-012-3 criteria to an EOP-012-2 constraint during the period between October 1, 2024 and the effective date of EOP-012-3. The DT made significant modifications, based on industry feedback, to the CAP language and the Generator Cold Weather Constraint Declaration language. While the modifications were based on industry feedback, the underlying requirements are based on the FERC Directive(s). Additionally, the DT made significant modifications to R6 and the CAP process, including better separation of CAPs for units that actually experience a Generator Cold Weather Reliability Event and the review of applicability on similar equipment at other generating units.	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation supports the comments submitted by NAGF.	
Likes 0	
Dislikes 0	

Response
Thank you for your comment. Under EOP-012-2, the GO has no obligation to submit the Generator Cold Weather Constraint Declaration. EOP-012-2 Requirement R8 simply requires the GO to review the declaration on a 5-year periodicity and update any operating limitations that result from the constraint. Based on the FERC Directives, the DT revised EOP-012-3 R8 to require the submission of any Generator Cold Weather Constraint Declaration to the CEA. Attachment 1 was created, and additionally modified, to provide better clarity to GO's on identifying Generator Cold Weather Constraints. GO's may be required to modify any constraints declared under EOP-012-2 to comply with Attachment 1 but all GO's will be required to submit any existing declarations in order for the CEA to review and follow the FERC required approval process. The CEA cannot apply EOP-012-3 criteria to an EOP-012-2 constraint during the period between October 1, 2024 and the effective date of EOP-012-3. The DT made significant modifications, based on industry feedback, to the CAP language and the Generator Cold Weather Constraint Declaration language. While the modifications were based on industry feedback, the underlying requirements are based on the FERC Directive(s). Additionally, the DT made significant modifications to R6 and the CAP process, including better separation of CAPs for units that actually experience a Generator Cold Weather Reliability Event and the review of applicability on similar equipment at other generating units.

Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	No
Document Name	
Comment	
TEPC agrees with EEI's response: *EEI does not agree with the current proposed changes to EOP-012, therefore, we are unable to support the Implementation Plan at this time.*	
Likes 0	
Dislikes 0	

Response
Thank you for your comments. The DT made significant modifications to EOP-012-3 based on industry feedback while ensuring adherence to the FERC Directives.

Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group

Answer	No
Document Name	
Comment	
WEC Energy Group supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT made significant modifications to EOP-012-3 based on industry feedback while ensuring adherence to the FERC Directives.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	
Comment	
Dominion Energy supports EEI comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT made significant modifications to EOP-012-3 based on industry feedback while ensuring adherence to the FERC Directives.	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	No
Document Name	

Comment	
PG&E supports NAGF concerns regarding providing clarification for how existing declarations under EOP-012-2 are to be transitioned under EOP-012-3.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment. Under EOP-012-2, the GO has no obligation to submit the Generator Cold Weather Constraint Declaration. EOP-012-2 R8 simply requires the GO to review the declaration on a 5-year periodicity and update any operating limitations that result from the constraint. Based on the FERC Directives, the DT revised EOP-012-3 R8 to require the submission of any Generator Cold Weather Constraint Declaration to the CEA. Attachment 1 was created, and based on industry feedback, additionally modified, to provide better clarity to GO's on identifying Generator Cold Weather Constraints. GO's may be required to modify any constraints declared under EOP-012-2 to comply with EOP-012-3 Attachment 1 but all GO's will be required to submit all declarations, whether newly identified under EOP-012-3 or an EOP-012-2 declaration modified per EOP-013-3 criteria in order for the CEA to review and follow the FERC required approval process. The CEA cannot apply EOP-012-3 criteria to an EOP-012-2 constraint declared during the period between October 1, 2024 and the effective date of EOP-012-3.	

Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	No
Document Name	
Comment	
NRG is in agreement with NAGF as the potential confusion related to declaration made under EOP-012-2 and how these will be addressed under EOP-012-3. More information is needed related to the process to be used to address these declarations made under the current standard, including the expectations for these existing declarations, timelines related to rejected declarations and any other obligations related to these declarations.	
Likes 0	

Dislikes 0	

Response
Thank you for your comment. Under EOP-012-2, the GO has no obligation to submit the Generator Cold Weather Constraint Declaration. EOP-012-2 R8 simply requires the GO to review the declaration on a 5-year periodicity and update any operating limitations that result from the constraint. Based on the FERC Directives, the DT revised EOP-012-3 R8 to require the submission of any Generator Cold Weather Constraint Declaration to the CEA. Attachment 1 was created, and based on industry feedback, additionally modified, to provide better clarity to GO's on identifying Generator Cold Weather Constraints. GO's may be required to modify any constraints declared under EOP-012-2 to comply with EOP-012-3 Attachment 1 but all GO's will be required to submit all declarations, whether newly identified under EOP-012-3 or an EOP-012-2 declaration modified per EOP-013-3 criteria in order for the CEA to review and follow the FERC required approval process. The CEA cannot apply EOP-012-3 criteria to an EOP-012-2 constraint declared during the period between October 1, 2024 and the effective date of EOP-012-3.

Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	No
Document Name	

Comment
NRG is in agreement with NAGF as the potential confusion related to declaration made under EOP-012-2 and how these will be addressed under EOP-012-3. More information is needed related to the process to be used to address these declarations made under the current standard, including the expectations for these existing declarations, timelines related to rejected declarations and any other obligations related to these declarations.

Likes 0	
Dislikes 0	

Response
Thank you for your comment. Under EOP-012-2, the GO has no obligation to submit the Generator Cold Weather Constraint Declaration. EOP-012-2 R8 simply requires the GO to review the declaration on a 5-year periodicity and update any operating limitations that result from the constraint. Based on the FERC Directives, the DT revised EOP-012-3 R8 to require the submission of any Generator Cold Weather Constraint Declaration to the CEA. Attachment 1 was created, and based on industry feedback, additionally modified, to provide

better clarity to GO's on identifying Generator Cold Weather Constraints. GO's may be required to modify any constraints declared under EOP-012-2 to comply with EOP-012-3 Attachment 1 but all GO's will be required to submit all declarations, whether newly identified under EOP-012-3 or an EOP-012-2 declaration modified per EOP-013-3 criteria in order for the CEA to review and follow the FERC required approval process. The CEA cannot apply EOP-012-3 criteria to an EOP-012-2 constraint declared during the period between October 1, 2024 and the effective date of EOP-012-3.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
AES US Renewables support NAGF comments for this question NAGF comments: *The NAGF is concerned with the potential confusion related to declaration made under EOP-012-2 and how these will be addressed under EOP-012-3. More information is needed related to the process to be used to address these declarations made under the current standard, including the expectations for these existing declarations, timelines related to rejected declarations and any other obligations related to these declarations. Additional support for this position is provided under question 9.* *Next, the NAGF believes that the requirement to create duplicative CAPs and declarations over the years and have them approved for an approved event is extremely inefficient for both the registered entities and NERC and the regions. This issue should be addressed through modifications to R6 or the definition of Generator Cold Weather Reliability Event. Prior to the requirement to request approval for these declarations, the repetition was likely manageable. But with the additional requirements related to both the filing process and the requirements, this is likely to become a documentation issue that detracts from the reliable operation of the grid.*	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Under EOP-012-2, the GO has no obligation to submit the Generator Cold Weather Constraint Declaration. EOP-012-2 R8 simply requires the GO to review the declaration on a 5-year periodicity and update any operating limitations that result from the constraint. Based on the FERC Directives, the DT revised EOP-012-3 R8 to require the submission of any Generator Cold	

Weather Constraint Declaration to the CEA. Attachment 1 was created, and based on industry feedback, additionally modified, to provide better clarity to GO's on identifying Generator Cold Weather Constraints. GO's may be required to modify any constraints declared under EOP-012-2 to comply with EOP-012-3 Attachment 1 but all GO's will be required to submit all declarations, whether newly identified under EOP-012-3 or an EOP-012-2 declaration modified per EOP-013-3 criteria in order for the CEA to review and follow the FERC required approval process. The CEA cannot apply EOP-012-3 criteria to an EOP-012-2 constraint declared during the period between October 1, 2024 and the effective date of EOP-012-3. The DT made significant modifications, based on industry feedback, to the CAP language and the Generator Cold Weather Constraint Declaration language. While the modifications were based on industry feedback, the underlying requirements are based on the FERC Directive(s). Additionally, the DT made significant modifications to R6 and the CAP process, including better separation of CAPs for units that actually experience a Generator Cold Weather Reliability Event and the review of applicability on similar equipment at other generating units.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	
Avista does not agree with the current proposed changes to EOP-012, therefore, we are unable to support the Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT made significant modifications to EOP-012-3 based on industry feedback while ensuring adherence to the FERC Directives.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	

Comment
The NAGF is concerned with the potential confusion related to declaration made under EOP-012-2 and how these will be addressed under EOP-012-3. More information is needed related to the process to be used to address these declarations made under the current standard, including the expectations for these existing declarations, timelines related to rejected declarations and any other obligations related to these declarations. Additional support for this position is provided under question 9. In addition, the NAGF believes that the requirement to create duplicative CAPs and declarations over the years and have them approved for an approved event is extremely inefficient for both the registered entities and NERC and the regions. This issue should be addressed through modifications to R6 or the definition of Generator Cold Weather Reliability Event. Prior to the requirement to request approval for these declarations, the repetition was likely manageable. But with the additional requirements related to both the filing process and the requirements, this is likely to become a documentation issue that detracts from the reliable operation of the grid.

Likes 0	
Dislikes 0	

Response
Thank you for your comment. Under EOP-012-2, the GO has no obligation to submit the Generator Cold Weather Constraint Declaration. EOP-012-2 R8 simply requires the GO to review the declaration on a 5-year periodicity and update any operating limitations that result from the constraint. Based on the FERC Directives, the DT revised EOP-012-3 R8 to require the submission of any Generator Cold Weather Constraint Declaration to the CEA. Attachment 1 was created, and based on industry feedback, additionally modified, to provide better clarity to GO's on identifying Generator Cold Weather Constraints. GO's may be required to modify any constraints declared under EOP-012-2 to comply with EOP-012-3 Attachment 1 but all GO's will be required to submit all declarations, whether newly identified under EOP-012-3 or an EOP-012-2 declaration modified per EOP-013-3 criteria in order for the CEA to review and follow the FERC required approval process. The CEA cannot apply EOP-012-3 criteria to an EOP-012-2 constraint declared during the period between October 1, 2024 and the effective date of EOP-012-3. The DT made significant modifications, based on industry feedback, to the CAP language and the Generator Cold Weather Constraint Declaration language. While the modifications were based on industry feedback, the underlying requirements are based on the FERC Directive(s). Additionally, the DT made significant modifications to R6 and the CAP process, including better separation of CAPs for units that actually experience a Generator Cold Weather Reliability Event and the review of applicability on similar equipment at other generating units.
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers

Answer	No
Document Name	
Comment	
Ameren agrees with NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Under EOP-012-2, the GO has no obligation to submit the Generator Cold Weather Constraint Declaration. EOP-012-2 R8 simply requires the GO to review the declaration on a 5-year periodicity and update any operating limitations that result from the constraint. Based on the FERC Directives, the DT revised EOP-012-3 R8 to require the submission of any Generator Cold Weather Constraint Declaration to the CEA. Attachment 1 was created, and based on industry feedback, additionally modified, to provide better clarity to GO's on identifying Generator Cold Weather Constraints. GO's may be required to modify any constraints declared under EOP-012-2 to comply with EOP-012-3 Attachment 1 but all GO's will be required to submit all declarations, whether newly identified under EOP-012-3 or an EOP-012-2 declaration modified per EOP-013-3 criteria in order for the CEA to review and follow the FERC required approval process. The CEA cannot apply EOP-012-3 criteria to an EOP-012-2 constraint declared during the period between October 1, 2024 and the effective date of EOP-012-3. The DT made significant modifications, based on industry feedback, to the CAP language and the Generator Cold Weather Constraint Declaration language. While the modifications were based on industry feedback, the underlying requirements are based on the FERC Directive(s). Additionally, the DT made significant modifications to R6 and the CAP process, including better separation of CAPs for units that actually experience a Generator Cold Weather Reliability Event and the review of applicability on similar equipment at other generating units.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	
Comment	

We do not agree with the current proposed changes to EOP-012, therefore, we are unable to support the Implementation Plan at this time.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The DT made significant modifications to EOP-012-3 based on industry feedback while ensuring adherence to the FERC Directives.

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	

Comment
EEI does not agree with the current proposed changes to EOP-012, therefore, we are unable to support the Implementation Plan at this time.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The DT made significant modifications to EOP-012-3 based on industry feedback while ensuring adherence to the FERC Directives.

David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	

Comment

Vistra supports NAGF Comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Under EOP-012-2, the GO has no obligation to submit the Generator Cold Weather Constraint Declaration. EOP-012-2 R8 simply requires the GO to review the declaration on a 5-year periodicity and update any operating limitations that result from the constraint. Based on the FERC Directives, the DT revised EOP-012-3 R8 to require the submission of any Generator Cold Weather Constraint Declaration to the CEA. Attachment 1 was created, and based on industry feedback, additionally modified, to provide better clarity to GO's on identifying Generator Cold Weather Constraints. GO's may be required to modify any constraints declared under EOP-012-2 to comply with EOP-012-3 Attachment 1 but all GO's will be required to submit all declarations, whether newly identified under EOP-012-3 or an EOP-012-2 declaration modified per EOP-013-3 criteria in order for the CEA to review and follow the FERC required approval process. The CEA cannot apply EOP-012-3 criteria to an EOP-012-2 constraint declared during the period between October 1, 2024 and the effective date of EOP-012-3. The DT made significant modifications, based on industry feedback, to the CAP language and the Generator Cold Weather Constraint Declaration language. While the modifications were based on industry feedback, the underlying requirements are based on the FERC Directive(s). Additionally, the DT made significant modifications to R6 and the CAP process, including better separation of CAPs for units that actually experience a Generator Cold Weather Reliability Event and the review of applicability on similar equipment at other generating units.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation does not agree, and notes that the revision of this standard increases undue administrative burden on industry and CEA's without effectively addressing freeze protection technology and requirements.	
Likes 0	

Dislikes 0	

Response
Thank you for your comments. The DT made significant modifications to EOP-012-3 based on industry feedback while ensuring adherence to the FERC Directives.

Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	

Comment
MP feels more clarity is needed on items in Question #1 and #3, therefore is unable to support the Implementation Plan at this time. Additionally, MP supports NAGF comments on Question #7 response related to the requirements to complete duplicative CAPs and declarations over the years and have them approved is extremely inefficient for registered entities and NERC. The addition of the approvals process greatly increases the inefficiencies related to minor refinements that may be needed to the Generator Cold Weather Reliability Event definition.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The DT made significant modifications to EOP-012-3 based on industry feedback while ensuring adherence to the FERC Directives. Additionally, the DT made significant modifications, based on industry feedback, to the CAP language and the Generator Cold Weather Constraint Declaration language. While the modifications were based on industry feedback, the underlying requirements are based on the FERC Directive(s). Additionally, the DT made significant modifications to R6 and the CAP process, including better separation of CAPs for units that actually experience a Generator Cold Weather Reliability Event and the review of applicability on similar equipment at other generating units.

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	

Comment	
NV Energy does not agree with the current proposed changes to EOP-012, therefore, we are unable to support the Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT made significant modifications to EOP-012-3 based on industry feedback while ensuring adherence to the FERC Directives.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	
See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to EEI.	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	No
Document Name	
Comment	

PNM agrees with the comments of EEI. *EEI does not agree with the current proposed changes to EOP-012, therefore, we are unable to support the Implementation Plan at this time.*	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to EEI.	
Robert Blackney - Edison International - Southern California Edison Company - 1	
Answer	No
Document Name	
Comment	
See comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to EEI.	
Stephanie Kenny - Edison International - Southern California Edison Company - 6	
Answer	No
Document Name	
Comment	
See EEI comments	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to EEI.	
Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	
Comment	
Enel North America supports EEI's response and does not agree with the current proposed changes to EOP-012, therefore, Enel North America is unable to support the Implementation Plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to EEI.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you.	

Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no concerns.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
AZPS does not disagree with the proposed implementation plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	

NERC should clarify how the constraint declaration process for EOP-012-2 (currently in effect) will be handled and addressed by the Regional Entities for the 2024-2025 winter season since EOP-012-3 will not be approved until a future date, possibly in 2025.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. Under EOP-012-2, the GO has no obligation to submit the Generator Cold Weather Constraint Declaration. EOP-012-2 R8 simply requires the GO to review the declaration on a 5-year periodicity and update any operating limitations that result from the constraint. Therefore, during the 2024/2025 witnerwinter season, GO's must document any constraints that are declared and update any operating limitations that result from the constraint declaration.

Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	

Response
Thank you for your support.

Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	

Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Rhonda Jones - Invenergy LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. See response to NAGF's comment	

8. Do you agree with the Implementation Plan for EOP-012-3? If you do not agree, please propose an alternate implementation plan with a detailed explanation.	
Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	
Comment	
Enel North America agrees with NAGF's comments that additional information is required regarding the process for handling these declarations made under the current standard. This includes expectations for existing declarations, timelines for rejected declarations, and any other related obligations.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team has modified language in the Standard to provide improved clarity in its application.	
Stephanie Kenny - Edison International - Southern California Edison Company - 6	

Answer	No
Document Name	
Comment	
See EEI comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see the response to EEI's comment.	
Robert Blackney - Edison International - Southern California Edison Company - 1	
Answer	No
Document Name	
Comment	
See comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see the response to EEI's comment.	
Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	
Comment	

Invenergy needs more clarity regarding the revisions to the standard before it can comment on the Implementation plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	
Comment	
Invenergy needs more clarity regarding the revisions to the standard before it can comment on the Implementation plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	No
Document Name	
Comment	
PNM agrees with the comments of EEI:	

While EEI does not object to the proposed Implementation Plan, we do not support the proposed changes to EOP-012 and therefore cannot support the Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see the response to EEI's comment.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	No
Document Name	
Comment	

: It is the opinion of ACES that the effective date language for Requirements R2, R6, R7, and R8 is overly verbose and ambiguous. We recommend modifying the Implementation Plan as follows:

Effective Date and Phased-In Compliance Dates

Compliance Date for EOP-012-3 Requirement R2 – New Generating Units

Entities beginning commercial operation after the effective date of EOP-012-3 shall become compliant with Requirement R3 no later than the commercial operations date for the applicable unit. Any Generator Cold Weather Constraint shall be submitted in accordance with the timeline provided in Requirement R8.

Compliance Date for EOP-012-3 Requirement R6

Entities shall comply with Requirement R6 by the effective date of the Standard.

Compliance Date for EOP-012-3 Requirement R7

Entities shall comply with Requirement R7 by the effective date of the Standard.

Compliance Date for EOP-012-3 Requirement R8

Entities shall comply with Requirement R8 by the effective date of the Standard.

Any entity that previously declared one or more Generator Cold Weather Constraint(s) under Reliability Standard EOP-012-2 shall perform a review of any such declaration(s) for compliance with Reliability Standard EOP-012-3 Attachment 1 by the effective date. The entity shall submit any previously declared Generator Cold Weather Constraint(s) no later than 45 days following the effective date of Reliability Standard EOP-012-3.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The Drafting Team has modified language in the Standard to provide improved clarity in its application.

Selene Willis - Edison International - Southern California Edison Company - 5

Answer	No
Document Name	

Comment

See EEI Comments

Likes 0	
Dislikes 0	

Response

Thank you for the comment. Please see the response to EEI's comment.

Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
Until the final version of the standard is complete, MP is unable to provide a position on the implementation plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation does not agree. We recommend that more input be requested from GO/GOP's in industry prior to issuing a draft for comment allowing for a more effective and complete standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	

Comment	
Vistra Agrees with comments made by Duke Energy.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see the response to Duke Energy comment.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	
While EEI does not object to the proposed Implementation Plan, we do not support the proposed changes to EOP-012 and therefore cannot support the Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	
Comment	

While we do not object to the proposed Implementation Plan, we do not support the proposed changes to EOP-012 and therefore cannot support the Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	No
Document Name	
Comment	
Ameren agrees with EEI's and NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. See response to NAGF and EEI’s comment.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
Until the final version of the standard is completed, the NAGF is unable to provide a position on the implementation plan.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	
While Avista does not object to the proposed Implementation Plan, we do not support the proposed changes to EOP-012 and therefore cannot support the Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	

AES US Renewables is concerned with the current implementation plan which requires an entity to submit previously declared constraint under EOP-012-2 for compliance with EOP-012-3 no later than 45 days following the effective date of EOP-012-3. While the 45-day timeline is not a major concern, we have questions for the drafting team to consider:

- Cost constraints that are allowed in EOP-012-2 are no longer allowed in EOP-012-3. If this constraint is denied by the CEA under EOP-012-3, what is the process and associated timelines that entities need to follow for recourse?
- Is there a possibility for entities to make changes to the constraint declared under EOP-012-2 before submittal to CEA under EOP-012-3 to conform to the Attachment 1 criteria?

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team has modified language in the Standard to provide improved clarity in its application.	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	No
Document Name	
Comment	
Until the final version of the standard is completed, PG&E is unable to provide a position on the implementation plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Please see the response to EEI's comment.	

Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	No
Document Name	
Comment	
TEPC agrees with EEI's response: *EEI does not agree with the current proposed changes to EOP-012, therefore, we are unable to support the Implementation Plan at this time.*	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. See response to EEI's comment.	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation does not agree with the proposed changes to EOP-012, therefore, will not comment on the Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	No

Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and the North American Generator Forum (NAGF) on question 8	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
Duke Energy does not agree with the implementation plan for EOP-012-3. Due to the major changes to requirements R6, R7, and R8, a clear implementation date is required to allow the GOs to determine which standard criteria are required. Duke Energy recommends an implementation date of October 1, 2025.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	

Standard language should be fixed prior to implementation review.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	No
Document Name	
Comment	
Based on our comments associated with these ballots, BC Hydro is unable to support the standard implementation plan at this time.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
AZPS does not disagree with the proposed implementation plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	

FirstEnergy has no concerns.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your comments.	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Thomas Foltz - AEP - 5	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	
Document Name	
Comment	
While NV Energy does not object to the proposed Implementation Plan, we do not support the proposed changes to EOP-012 and therefore cannot support the Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	

Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response
Thank you for your comment. See the response to NAGF's comment.

9. Do you agree that EOP-012-3 is cost effective to address the Directives in the FERC Order? If you do not agree, or if you agree but have suggestions for improvement to enable more cost-effective approaches, please provide your recommendation and, if appropriate, technical, or procedural justification.

Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	No
Document Name	

Comment
Accelerated timelines and redundant reporting criteria create inefficiencies in work processes for the GO. This includes potential unplanned maintenance outages to meet CAP implementation expectations.

Likes 0	
Dislikes 0	

Response
Thank you for the comment.

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
Duke Energy's focus is on the reliable operation of the BES and will not submit comments on the cost effectiveness of the proposed changes to EOP-012-3.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the North American Generator Forum (NAGF) on question 9	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see NAGF response.	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	No

Document Name	
Comment	
Timelines to complete CAPs shorter than those specified in R7 are not cost effective if qualified personnel, proper materials and required plant conditions are not available. Unplanned outages reduce reliability of the BES by causing units to be started and stopped outside of planned outage periods.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group does not have specific comments with respect improvements to cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	No
Document Name	
Comment	

As identified above, as proposed, the modifications requiring multiple filings for what is likely to be annual events isare unreasonable and extremely inefficient while not providing any improvement to reliability. NRG is in alignment with NAGF who asks for the SDT to address with the CEA how cost will be considered when the generation of documentation is excessive	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	No
Document Name	
Comment	
As identified above, as proposed, the modifications requiring multiple filings for what are likely to be annual events isare unreasonable and extremely inefficient while not providing any improvement to reliability. NRG is in alignment with NAGF who asks for the SDT to address with the CEA how cost will be considered when the generation of documentation is excessive.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	

AES US Renewables support NAGF comments for this question.

NAGF comments:

As identified above, as proposed, the modifications requiring multiple filings for what is likely to be annual events is unreasonable and extremely inefficient while not providing any improvement to reliability. Ultimately, this is a documentation requirement that falls under paragraph 81. Efforts should be made to minimize the time and effort required to address the FERC order while trying to minimize the burden to industry. This can be done by modifying R6, to allow for the identification of the event being the same as a previous event and therefore the event falls under the already approved declaration. As one way to address this, Section 6.1.1 could have language added to allow the GO to state, once a review of the event is completed, that this event is similar or the same as the event addressed under the CAP dated XX/XX/XX that addresses the event that occurred on XX/XX/XXXX. This would end the process at that point and no further actions would be required, including creation of a new CAP, new constraint and a new filing to NERC to have them tell the GO they are correct.

The NAGF recognizes that FERC has ordered that all reference to cost be removed. In discussions with OEM providers related to doing an engineering study the cost of the study to determine what it would take to improve the capability of generators is more than reasonable. In other words, the cost to do the study to determine the cost is very expensive, before any effort to improve the capability is made. The NAGF asks for the SDT to address with the CEA how cost will be considered when the generation of documentation is excessive.

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to NAGF.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	

With the removal of the cost component in the Definition of the “Generator Cold Weather Constraint” it is very difficult to evaluate the cost effectiveness of the standard. Please retain the cost component in the definition of the “Generator Cold Weather Constraint” to ensure the Generation Owner has the ability to evaluate cold weather protections against reliability and availability impacts.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
As identified above, as proposed, the modifications requiring multiple filings for what is likely to be annual events is unreasonable and extremely inefficient while providing no improvement to reliability. Ultimately, this is a documentation requirement that falls under paragraph 81. Efforts should be made to minimize the time and effort required to address the FERC order while trying to minimize the burden to industry. This can be done by modifying R6, to allow for the identification of the event being the same as a previous event and therefore the event falls under the already approved declaration. As one way to address this, Section 6.1.1 could have language added to allow the GO to state, once a review of the event is completed, that this event is similar or the same as the event addressed under the CAP dated XX/XX/XX that addresses the event that occurred on XX/XX/XXXX. This would end the process at that point and no further actions would be required, including creation of a new CAP, new constraint and a new filing to NERC to have them tell the GO they are correct. The NAGF recognizes that FERC has ordered that all reference to cost be removed. In discussions with OEM providers related to doing an engineering study, especially for increasing the tower strength of wind turbines, the cost of the study to determine what it would take to improve the capability of generators is such that they are unwilling to offer the service. In other words, the cost to do the study to determine the cost is very expensive, before any effort to improve the capability is made. The NAGF asks for the SDT to address with the CEA how cost will be considered when the generation of documentation is excessive.	

Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The DT has made changes to the standard to lessen administrative burden in this area.	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	No
Document Name	
Comment	
Ameren agrees with NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to NAGF comment.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	
Comment	
With the removal of the cost component in the Definition of the “Generator Cold Weather Constraint” it is very difficult to evaluate the cost effectiveness of the standard. Please retain the cost component in the definition of the “Generator Cold Weather Constraint” to ensure the Generation Owner has the ability to evaluate cold weather protections against reliability and availability impacts.	
Likes 0	
Dislikes 0	

Response	
Thank you for the comment.	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	
Comment	
Vistra Agrees with comments made by TVA.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation does not agree. As stated above, there is too much administrative burden that does not provide adequate empirical data over the lifetime of generating equipment in industry.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	

Answer	No
Document Name	
Comment	
MP supports NAGF comments that multiple filings for repeated events such as icing on units where technology does not exist for a region to support freeze protection down to ECWT is extremely inefficient, unreasonable and provides no value to improvement of reliability.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to NAGF comment.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	No
Document Name	
Comment	
It is the opinion of ACES that as written, the proposed modifications to EOP-012 are not the most cost-effective approach. We recommend consideration of the modifications we proposed in our previous responses, specifically questions 2 and 8. It is our belief that implementing the proposed modifications will add clarity and therefore reduce the compliance burden for responsible entities.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	No
Document Name	

Comment	
Accelerated timelines and redundant reporting criteria create inefficiencies in work processes for the GO. This includes potential unplanned maintenance outages to meet CAP implementation expectations.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	
Comment	
Invenergy is not able to comment on the cost effectiveness of the revisions to the proposed standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	No
Document Name	
Comment	

The reduced timelines of completing CAPS required by R6 may result in extra costs to accelerate outages, material delivery and potentially availability costs to take unplanned outages to fast-track implementation. Further, Southern agrees with NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	
Comment	
Invenergy is not able to comment on the cost effectiveness of the revisions to the proposed standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	
Comment	

Enel North America is concerned that timelines for completing CAPs that are shorter than those outlined in R7 are not cost-effective unless qualified personnel, appropriate materials, and necessary plant conditions are available. Additionally, the shorter timelines could cause an increase in unplanned outages that compromise the reliability of the BES by occurring outside scheduled outage periods.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no concerns.	

Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for the comment.	
Diana Torres - Imperial Irrigation District - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Kevin Conway - Western Power Pool - 4	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Greg Sorenson - Greg Sorenson On Behalf of: Tremayne Brown, ReliabilityFirst , 10; - Greg Sorenson	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	

Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	
Document Name	
Comment	
Black Hills Corporation will not comment on cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	

Answer	
Document Name	
Comment	
PG&E does not have any comments on the cost effectiveness of the drafted standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	
Document Name	
Comment	
NA	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	
Document Name	
Comment	

NV Energy will not provide a response to the cost effectiveness of the proposed changes to EOP-012-2.

Likes 0	
Dislikes 0	

Response
Thank you for the comment.

10. Please provide any additional comments for the standard drafting team to consider, if desired.
Natalie Johnson - Enel Green Power - 5

Answer	
Document Name	

Comment
Enel North America agrees with the MRO NSRF recommendation that the standard drafting team ensure that any performance timelines for which a registered entity is to be held accountable by the CEA be explicitly defined in the requirement language and not a document that exists outside the structure of NERC Reliability Standards.

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT defers proposed comments regarding changes in the process to NERC staff. The DT has worked with NERC staff to support changes within the Standard based on the comments received from industry.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	
Document Name	
Comment	

OPG supports HQ comments: "R2 High and Severe VSL: The Lower VSL and Moderate VSL's text "The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) …." Is not reflected in the R2 High and Severe VSL. For consistency throughout the R2 VSLs, we suggest adding "for its applicable unit(s)" before "meeting the criteria in R2 …"

E2 Lower VSL: we suggest removing "to implement appropriate freeze protection measures" from the E2 Lower VSL to ensure consistency with the wording of the Moderate, High and Severe VSLs."

OPG supports Manitoba's comment regarding the wording around extremely low ECWTs: "Some of our ECWT is below -40 degree C. In discussions with our design team, many components only have a rating down to -40 degrees C. There should be some wording around extremely low ECWTs where it is not readily available (or economically possible to pursue) the purchase of equipment with that low of a temperature rating. (To clarify: we are talking about ECWTs around -43 degrees C and ratings of -40 degrees C. We are not suggesting equipment ratings of -15 degrees C vs -43 degree ECWT)."

OPG supports Manitoba Hydro's comment : "For R3 Manitoba Hydro recommends instead of referencing the October 1, 2027 date in the Requirement remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction."

OPG has the following comments:

NERC definition uses the concept of apparent cause(s), which is different from the Root Cause.

OPG suggest that SDT be consistent with other standards terminology (PRC-004-6 and PRC-010-2, where they are using the term “Root Cause”) Please clarify, in the case of the Canadian entities that routinely and for extensive durations are operating at temperatures close to their respective ECWT (i.e. -40◦C), through what meteorological phenomenon it is possible to have freezing precipitation (e.g., sleet, snow, ice, and freezing rain) at that ECWT (i.e. -40◦C) that could impact equipment within the Generator Owner’s control. If rain will find it’sits way to an equipment operating at -40◦C will actually warm-up that equipment. Basically, there could be only a very low probability of exacerbating cooling effect, involving the latent heat related to energy involved in water phase changes. Water vapors would release latent heat of fusion in the atmosphere long before reaching the BES Generation Units equipment, and unless they aggregate into falling chunks of ice it would most likely not be the root cause of “Generator Cold Weather Reliability Event” We propose that impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner’s control, should be excluded for equipment with ECWT of -10◦C or below.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The VSLs have been updated. Attachment 1 has been updated based on industry comments. Changes to the date for ECWT were incorporated based on industry comment. The DT considered this proposed change to the Generator Cold Weather Reliability Event definition but chose not to change the definition based on industry’s previous comments. The DT has made changes in Attachment 1 to account for Generator Cold Weather Constraints.	
Rhonda Jones - Invenergy LLC - 5	
Answer	
Document Name	
Comment	
Invenergy recommends using consistent language in R1.1.1. regarding updates to the cold weather preparedness plan and CAPs following a re-calculation of the ECWT. The requirement should use 6 months or 6 calendar months, but not both.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments. The DT will review the Standard language to ensure consistency with regards to the type of day.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	
Document Name	
Comment	
Invenergy recommends using consistent language in R1.1.1. regarding updates to the cold weather preparedness plan and CAPs following a re-calculation of the ECWT. The requirement should use 6 months or 6 calendar months, but not both.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT will review the Standard language to ensure consistency with regards to the type of day.	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	
Document Name	
Comment	
PNM recommends that the standard drafting team ensure that any dates for which a registered entity is to be held to be in the requirement language and not a document that exists outside the structure of NERC Reliability Standards. Standard Drafting team may consider creating an attached corrective action plan guideline to be filled out -	
Likes 0	

Dislikes 0	

Response
Thank you for your comments. The DT defers proposed comments regarding changes in the process to NERC staff. The DT has worked with NERC staff to support changes within the Standard based on the comments received from industry.

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	
Document Name	

Comment
We at ACES appreciate the effort put forth by the SDT to modify EOP-012 under such an abbreviated timeline. It is our understanding that the specific intent of this project is to consider and implement the directives in the FERC Order; however, we believe that one additional modification should be considered by the SDT. Requirement 1, Part 1.1.1 contains an overlapping timeline for updating the entities' cold weather preparedness plan(s) and developing a Corrective Action Plan (CAP). As written, both actions require completion within six (6) calendar months of the recalculation of the Extreme Cold Weather Temperature (ECWT). It is our contention that corrective actions will likely not be identified until after a cold weather preparedness plan is reviewed/updated. Thus, we believe that requiring both actions to be completed concurrently effectively shortens the time allowed for a cold weather preparedness plan to be reviewed and updated. Therefore, we contend that nine (9) calendar months is a more appropriate deadline for developing a CAP. We recommend the following modification to Requirement R1 Part 1.1.1: R1. At least once every five calendar years, each Generator Owner shall, for each of its applicable generating unit(s): 1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable unit(s) and identify the calculation date and source of temperature data; and 1.1.1. If the re-calculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall:

1.1.1.1. Review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation. 1.1.1.2. Develop a Corrective Action Plan for any new corrective actions needed to provide the required operational capability under Requirement R2 or R3 within nine (9) calendar months of the recalculation. Thank you for the opportunity to comment.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT believes that a Corrective Action Plan and updates to the cold weather preparedness plans can be completed during the same time period. A recalculation of the ECWT at least once every five calendar years that might cause a significant change in the ECWT value, implies, short if Generator Cold Weather Reliability Events, a generating unit can effectively operate to the ECWT. If it suffered a Generator Cold Weather Reliability Event, a Corrective Action Plan would already be in progress (as well as an update to the cold weather preparedness plan because of the Generator Cold Weather Reliability Event.)	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	
Document Name	
Comment	
NV Energy recommends that the standard drafting team ensure that any dates for which a registered entity is to be held to be in the requirement language and not a document that exists outside the structure of NERC Reliability Standards.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. The DT defers proposed comments regarding changes in the process to NERC staff. The DT has worked with NERC staff to support changes within the Standard based on the comments received from industry.	
Mark Flanary - Midwest Reliability Organization - 10	
Answer	
Document Name	
Comment	
MRO recommends that any performance timelines for which a registered entity will be held accountable by the CEA be explicitly defined in the requirement language.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT defers proposed comments regarding changes in the process to NERC staff. The DT has worked with NERC staff to support changes within the Standard based on the comments received from industry.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	
Document Name	
Comment	
The SRC recommends that the CAP extension and Constraint processes each be revised to include a Step 5 – NERC Reporting to Industry. Under this step 5, NERC would publish an annual report to provide industry insight into the types of constraints CEAs have approved and disapproved during the year, discuss lessons learned from the review and approval process, and provide Reliability Coordinators and Balancing Authorities insight into the cumulative impact of constraint approvals across fleets of resource types. This report would not include any confidential unit-specific information, and could coincide with or otherwise leverage NERC's annual report to FERC on Generator Cold Weather Constraint declarations.	

Additionally, the SRC recommends that the Generator Cold Weather CAP Extension and Constraint Process be referenced in EOP-012-3, Section E, Associated Documents, since footnote 11 appears to reference this process. The SRC also recommends that Requirement R7 be revised as follows to include a new Part 7.5 that clarifies that the existence of a CAP does not excuse a Generator Owner from taking such technically feasible steps as it can to improve the extreme cold weather performance of a unit while the CAP is being implemented: 7.5. Continue to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The NERC Section 1600 Cold Weather Data submittals will capture the current Generator Cold WeatherWeather Constraints. The DT defers the suggestion to NERC staff regarding reporting to industry. The DT has updated the "Associated Documents" section. The DT feels that the "existence of a Corrective Action Plan" suggestion is better placed in the Technical Rationale.

Alan Wahlstrom - Southwest Power Pool, Inc. (RTO) - NA - Not Applicable - MRO,WECC	
Answer	
Document Name	

Comment
SPP agrees with the comments of The ISO/RTO Council (IRC) Standards Review Committee (SRC)

Likes 0	
Dislikes 0	

Response
Please see responses to that organization's comments.

Romel Aquino - Edison International - Southern California Edison Company - 3	
Answer	
Document Name	EEI Near Final Revised Draft Comments _ Project 2024-03 _ Draft 1 _ Rev 0d _ 10_31_2024.docx
Comment	
See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI comments.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	
Document Name	
Comment	
In Requirement R1 Part 1.1.1- Consider adding “calendar” in later part of language to be consistent with added language. Consider “If new corrective actions are needed to provide the required operational capability under Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) **calendar** months of the recalculation.” Measure M3 : The phrase “Identification of generating unit(s) minimum temperature per Part 1.2.2 which is equal to or less than the unit’s Extreme Cold Weather Temperature” needs to drop the latter part “which is equal to or less than the unit’s Extreme Cold Weather Temperature” as that statement could be incorrect. A unit’s minimum temperature might be above an ECWT due to a Generator Cold Weather Constraint or simply the geographical location of the unit.	

Requirement R7 could be sharpened by removing “as applicable” to read as “Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, or R3 shall:, as applicable”. Requirement R7 requires a Corrective Action Plan condition to be evident and “as applicable” is not needed to differentiate if it is a R1, R2, or R3 Corrective Action Plan.

Suggest that language in Requirement R6 Part 6.2 and Requirement R7 Part 7.3 should be mirrored:

Requirement R6 Part 6.2 states: ”6.2 Update the Corrective Action Plan action(s) and timetable(s), with justification, and submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 6.1. The submitted Corrective Action Plan extension request shall include the following:

6.2.1. Circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

6.2.2. Revisions to the selected actions in Part 6.1, if any, including utilization of Operating Procedures, if applicable; and

6.2.3. Updated timetable for implementing the selected actions in Part 6.1.”

Requirement R7 Part 7.3 states: “7.3 Submit a Corrective Action Plan extension request, for the approval of the CEA, where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 7.1. The submitted request shall:

7.3.1 Explain the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.3.2 Include, as applicable, revisions to the selected actions in Part 7.1, including utilization of Operating Procedures; and

7.3.3 Include an updated timetable for implementing the selected actions in Part 7.1”

Suggest changing Requirement R7 Part 7.3 to mirror 6.2 and read as :

“7.3 Update the Corrective Action Plan action(s) and timetable(s), with justification, and submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 7.1. The submitted Corrective Action Plan extension request shall include the following:

7.3.1. Circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.3.2. Revisions to the selected actions in Part 7.1, if any, including utilization of Operating Procedures, if applicable; and

7.3.3. Updated timetable for implementing the selected actions in Part 7.1."

Need to mirror language in Requirement 6 Part 6.3 and Requirement R7 Part 7.4. Requirement R6 Part 6.3 contains "if applicable" after "Requirement R8". If the DT believes "if applicable" is appropriate it should be added (with appropriate punctuation) to Requirement R7 Part 7.4 to read "Document in a declaration, with justification, any Generator Cold Weather Constraint in accordance with Requirement R8**, if applicable**, that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan."

In Attachment 1, the phrase "Heat tracing or other de-icing technologies for wind turbine blades that are not available in the Generator Owner's location" may need some clarification. Is the DT's thought the blades are "not available to the Generator Owner for the Generators Owner's location" or simply "not available for the Generator Owner's location."?

For "Case-by-Case" criteria 3a- What does the DT consider as "premature" and does it vary based on generator type (e.g., wind versus natural gas unit)? Is "replacement" meant to reference the unit being retired? To be auditable a timetable such as "3 or more years" should be incorporated into the language. While conditions may vary for consideration of retirement there can notcannot be a consideration for a replacement unit without the unit signaling to a TP/PC/BA that it was retiring

Consider updating the "Case-by-Case" criteria 3b to state: "The freeze protection measures would be applied to a generating unit that has a previously published retirement date **slated to occur** within three years of the Generator Cold Weather Constraint declaration; "

The definition provided in the Standard (to be included in the Glossary of Terms) for Generator Cold Weather Constraint and the definition language in the Technical Rationale for same term needs updated. The Standard states the definition as "Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components." but the Technical Rationale states "A Generator Cold Weather Constraint is any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the following criteria." Suggest changing the Technical Rationale to "A Generator Cold Weather Constraint is defined as "Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components." The following criteria should be used in the development of Generator Cold Weather Constraints:"

The NERC process should add some clarifying language to line up with SGAS FAQ regarding use of Corrective Action Plans to cover multiple entities and locations within a single Corrective Action Plan even in cases where the entities are not in Coordinated Oversight.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The DT will make consistent changes in the Standard regarding the day type. The DT has made changes to ensure consistency. Attachment 1 has been updated based on industry comments. The DT defers proposed comments regarding changes in the process to NERC staff. The DT has worked with NERC staff to support changes within the Standard based on the comments received from industry. The DT has made changes to Requirement R8 based on industry responses.

Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	
Document Name	

Comment
Please see comments in questions above.

Likes 0	
Dislikes 0	

Response
Thank you for the comment.

Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	
Document Name	

Comment

Reclamation recommends removing requirement R1.1 as the calculations being required by NERC/FERC do not provide a proper long-term analysis of the temperature conditions for industry. An "average" over 24 years does not properly reflect the extreme weather conditions that have been recorded in history.

Reclamation strongly recommends revising R1.2.2 in its entirety to:

- Ensure bullets are in an "OR" statement. It is misleading now which bullets are required to be met.
- Remove concurrent wind speed and precipitation, as this data is not tracked as detailed as weather temperatures and also does not affect equipment the same across industry, thus is subjective to interpretation. See previous comment on wind speed.
- Reword or provide guidance on "historical operating temperature at least one hour in duration". Temperature tracking is performed hourly or daily, and not recorded by the minute, thus "at least one hour in duration" is misleading.
- Remove the bullet containing engineering analysis. This is not feasible to meet this requirement for existing sites as contracting an engineering firm for an analysis could take years. An engineering analysis could be performed on certain industries, but would be a no value added on others (hydropower).

Likes 0	
Dislikes 0	

Response

Thank you for your comments. R1.2.2 follows the NERC approved style guideline and, only one of the items, per the style guideline for all Standards, is required within R1.2.2. Previous DTs had developed the wind speed caveat which would affect the ability of a unit to maintain heat in the surrounding environment. While the wind speed does not change the temperature of inanimate objects it does accelerate cooling by removing heat from inanimate objects until it matches the ambient temperature.

Mike Magruder - Avista - Avista Corporation - 1

Answer	
Document Name	

Comment

R8, new text includes an abbreviation “CEA”. Please spell out what the CEA is, we are assuming this is the Compliance Enforcement Agency, however it is not clear if this is indeed the intent of the language in the standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comments. Requirement R8 has been updated to reflect industry comments.	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	
Document Name	
Comment	
Ameren agrees with NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Please see responses to NAGF comments.	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	
Document Name	
Comment	
R2 High and Severe VSL: The Lower VSL and Moderate VSL’s text “The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) ….” Is not reflected in the R2 High and Severe VSL. For consistency throughout the R2 VSLs, we suggest adding “for its applicable unit(s)” before “meeting the criteria in R2 …”	

E2 Lower VSL: we suggest removing “to implement appropriate freeze protection measures” from the E2 Lower VSL to ensure consistency with the wording of the Moderate, High and Severe VSLs.

NB Power supports Manitoba’s comment regarding the wording around extremely low ECWTs: “Some of our ECWT is below -40 degree C. In discussions with our design team, many components only have a rating down to -40 degrees C. There should be some wording around extremely low ECWTs where it is not readily available (or economically possible to pursue) the purchase of equipment with that low of a temperature rating. (To clarify: we are talking about ECWTs around -43 degrees C and ratings of -40 degrees C. We are not suggesting equipment ratings of -15 degrees C vs -43 degree ECWT).”

NB Power supports Manitoba Hydro’s comment : “For R3 Manitoba Hydro recommends instead of referencing the October 1, 2027 date in the Requirement remove the date in the Requirement and add the wording “date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction.”

NERC definition uses the concept of apparent cause(s), which is different from the Root Cause. Unless there is an obvious situation, the CAP resulting from the apparent cause(s) related to Generator Cold Weather Reliability Event, may require a longer time for implementation, however we can avoid rework and use instead the Root Cause Analysis, which is better suited for the CAP determination

Please clarify, in the case of the Canadian entities that routinely and for extensive durations are operating at temperatures close to their respective ECWT (i.e. -40◦C), through what meteorological phenomenon it is possible to have freezing precipitation (e.g., sleet, snow, ice, and freezing rain) at that ECWT (i.e. -40◦C) that could impact equipment within the Generator Owner’s control. If rain will find it’sits way to an equipment operating at -40◦C will actually warm-up that equipment. Basically, there could be only a very low probability of exacerbating cooling effect, involving the latent heat related to energy involved in water phase changes. Water vapors would release latent heat of fusion in the atmosphere long before reaching the BES Generation Units equipment, and unless they aggregate into falling chunks of ice it would most likely not be the root cause of “Generator Cold Weather Reliability Event”

We propose that impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner’s control, should be excluded for equipment with ECWT of -10◦C or below.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The VSLs have been updated. Attachment 1 has been updated based on industry comments. Changes to the date for ECWT were incorporated based on industry comment. The DT considered this proposed change to the Generator Cold Weather Reliability Event definition but chose not to change the definition based on industry's previous comments. The DT will consider additional changes to the Generator Cold Weather Reliability Event definition based on industry comments. The DT has made changes in Attachment 1 to account for Generator Cold Weather Constraints.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	
Document Name	
Comment	

The NAGF identified two issues that the SDT must address based on implementation issues seen with EOP-012-2. The first was related to freeze protection measures not associated with Generator Cold Weather Critical Components. The SDT addresses this issue in the revised standard and the NAGF thanks the SDT for that modification.

The second issue is related to the individual regions looking at the ECWT calculations differently, with different expectations related to the data used for determining the ECWT for a plant. While the SDT has significantly modified the document related to calculating the ECWT, and while the NAGF supports these modifications, nothing in this document addresses the unreasonable position that some regions are taking to require a temperature reading for every hour in order to make an ECWT valid. In the vast majority of cases, the GO is not in a position to have over 54,000 data points for any location, let alone every location. The GO in most cases must gather data from third party providers, and none of the data is perfect. This issue must be addressed through either Requirement R1 or modification to the ECWT definition. The NAGF looks forward to working with the SDT to address this identified concern.

Since the NAGF members likely have a great deal more experience making these calculations, determining issues with the data and addressing these issues, the NAGF recommends that time be spent by the SDT to first understand the issues and the impact to entities before rushing this standard through the process without addressing this concern.

Under R2, there is a great deal of confusion related to incorporating the 20 MPH wind speed into the ECWT calculation process. The NAGF is requesting that the SDT add language to the technical reference document explaining how Generator Owners should accommodate the wind speed into their design criteria.

The NAGF has several concerns with language in Attachment 1. These are identified below:

1. In the second bullet under pre-approved constraints, the NAGF recommends adding “or unlikely to provide sufficient impact on blade icing events”

2.Under section 3 of Case-by-case Determination, the majority of the identified issues will come down to cost. As currently structured, it is unclear how the CEA will ensure consistency between regions or even within a single region. More details must be provided in the attachment or proposed process document to allow the Generator Owners to understand what is expected of them.

3. Under Bullet 3.a, the word dispatchable should be removed. Based on the evaluations from NERC, the unplanned retirement of any generator will likely reduce the reliability of the grid since a new generator will not be available to replace it for several years.

4. The NAGF would like the SDT to provide justification for the three years used in bullet 3.b. Based on current industry trends; it is more likely that a new unit to replace generators retiring early will not be available for 5 to 7 years. The NAGF believes that three-year period is much shorter than reasonable.

5. Bullet 3.e. is duplicative of bullet 3.d.

6. The pre-approved cold weather constraints in Attachment 1 should be re-worded for consistency. Item 1 for example is, “Wind turbine towers that have structural limitations...,” so the last one should be, “Combustion turbine inlet air filters that are vulnerable to the buildup of frozen precipitation, such that applying heat upstream of inlet air filters would be required.”

7. The last of the pre-approved GCWCs should be expanded to cover CTGs that do have inlet air heating but would require upsizing to ride through worst-possible snowstorms without tripping or derating.

8. A pre-approved GCWC should be added for derates or being forced offline due to freezing of items not under the GO’s control, e.g. having to reduce load at a combined cycle plant under adverse wind direction conditions so that the cooling tower plume does not create hazardous icing on adjacent roadways.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The DT refers comments related to Regions approach to NERC staff. The previous DT provided some content on the 20 mph wind speed determination in the Technical Rationale which was retained. The DT has made changes to Attachment 1 based on industry comments. In paragraph 47 of the June 2024 Order, FERC directed NERC to develop and submit

modifications to the Generator Cold Weather Constraint definition of Reliability Standard EOP-012-2, to remove the references to “cost,” “reasonable cost,” “unreasonable cost,” and “good business practices” and replace them with criteria that are objective, unambiguous, and auditable. The DT defers to NERC on comments related to regional consistency. The three year time period refers to when a unit has already declared they are retiring and additions of freeze protection measures were called out to be applied within the three years leading up to the retirement. Example- A unit announces retirement for 2032. In 2029 they had a Generator Cold Weather Reliability Event. Adding freeze protection measures may have an adverse effect on reliability (in terms of taking the unit out of service to add the freeze protection measures when the unit is not likely scheduled for any major maintenance outage). Bullets 3e and 3 d may not necessarily be duplicative. The DT made several changes to Attachment 1 which include updating the Case-by-Case determinations.

Robert Follini - Avista - Avista Corporation - 3	
Answer	
Document Name	
Comment	
R8, new text includes an abbreviation “CEA”. Please spell out what the CEA is, we are assuming this is the Compliance Enforcement Agency, however it is not clear if this is indeed the intent of the language in the standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The language should follow the NERC style guide..	

Ruchi Shah - AES - AES Corporation - 5	
Answer	
Document Name	
Comment	
AES US Renewables strongly recommend the drafting team to develop further guidance on how to account both ECWT and 20mph wind speed for new generators (specifically for IBRs) as required in R2. Currently, the technical rationale does not provide much guidance on how determination can be made and our OEMs do not provide information concerning equipment’s minimum operating temperature at	

certain wind speeds. Using wind chill temperature formula to determine what the minimum design temperature can be misleading. In fact, on the National Weather Service webpage, it specifically states that “wind chill temperature is how cold people and animals feel when outside”. Additionally, we request that the drafting team provide guidance in the Technical Rationale concerning the need for Solar facilities to meet ECWT since the lowest temperatures normally occur during night time when Solar facilities are not generating. Should ECWT be calculated differently for Solar generators? We also recommend adding the flow chart that was provided during the 10/24/2024 webinar in the Technical Rationale. It is a good reference to include in the Technical Rationale.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. ECWT is a calculation based on a definition that has been approved without regard to generator type. The flow chart has been added to the Technical Rationale.

Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	
Document Name	

Comment
Tri-State supports MRO NSRF Comments.

Likes 0	
Dislikes 0	

Response

See the response to MRO NSRF's comment.	
Carver Powers - Utility Services, Inc. - 4	
Answer	
Document Name	
Comment	

1. There should be a process for Registered Entities to be able to submit consideration of additional constraints to be added to the EOP-012-3 Attachment 1 Pre-Approved Generator Cold Weather Constraints in the future after EOP-012-3 is approved by FERC.

2. What documentation will NERC require for submitting a constraint declaration? Suggest NERC develop a form and required evidence (e.g., photos, narrative, OEM pre-existing limitations, engineering analysis, etc.).

3. If the Regional Entities do not have the technical expertise to evaluate constraint declarations, and rely on third-party 'experts' this needs to be made transparent to the Registered Entities.

4. If a Registered Entity has previously received an approval of a Pre-Approved Generator Cold Weather Constraint (per Attachment 1 of EOP-012-3) due to one cold weather event, do they need to resubmit the constraint declaration for every similar cold weather event during that particular winter season that causes the same constraint? Suggest requiring constraint declarations of a similar nature just once per winter season.

5. Regarding the ECWT calculation, suggest adding guidance regarding combining data from different weather data resources, so that the frequency sampling is the same. For example, if one weather data source gathers temperature data three times per hour and another weather data source gathers weather data one time per hour, this will skew the 0.2 percentile in favor of the more frequent weather data source. Suggest adding guidance with a threshold such as at least 66% of the hours for each year from each weather data source must have hourly data.

Likes 0	
Dislikes 0	
Response	

Thank you for your comments. The DT defers proposed comments regarding changes in the process to NERC staff. The DT has worked with NERC staff to support changes within the Standard based on the comments received from industry. The DT has made changes to Requirement R8 based on industry responses. ECWT guidance document was updated.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	
Document Name	
Comment	
As suggested by NAGF, Under R2, there is a great deal of confusion related to incorporating the 20 MPH wind speed into the ECWT calculation process. The NAGF is requesting that the SDT add language to the technical reference document explaining how Generator Owners should accommodate the wind speed into their design criteria. Also, under section 3 of Case-by-case Determination, the majority of the identified issues will come down to cost. As currently structured, it is unclear how the CEA will ensure consistency between regions or even within a single region. More details must be provided in the attachment or proposed process document to allow the Generator Owners to understand what is expected of them.	
Likes 0	
Dislikes 0	
Response	
Please see responses to NAGF comments.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	
Document Name	
Comment	
As suggested by NAGF, Under R2, there is a great deal of confusion related to incorporating the 20 MPH wind speed into the ECWT calculation process. The NAGF is requesting that the SDT add language to the technical reference document explaining how Generator Owners should accommodate the wind speed into their design criteria. Also, Under section 3 of Case-by-case Determination, the majority of the identified issues will come down to cost. As currently structured, it is unclear how the CEA will ensure consistency between regions	

or even within a single region. More details must be provided in the attachment or proposed process document to allow the Generator Owners to understand what is expected of them.	
Likes 0	
Dislikes 0	
Response	
Please see responses to NAGF comments.	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	
Document Name	
Comment	
PG&E supports NAGF concerns regarding ECWT calculation and the recommendation to provide clarification in incorporating wind speed into calculations in the technical reference document.	
Likes 0	
Dislikes 0	
Response	
Please see responses to NAGF comments.	
Chantal Mazza - Chantal Mazza On Behalf of: Junji Yamaguchi, Hydro-Quebec (HQ), 1, 5; Nicolas Turcotte, Hydro-Quebec (HQ), 1, 5; - Chantal Mazza	
Answer	
Document Name	
Comment	

R2 High and Severe VSL: The Lower VSL and Moderate VSL's text "The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) …." Is not reflected in the R2 High and Severe VSL. For consistency throughout the R2 VSLs, we suggest adding "for its applicable unit(s)" before "meeting the criteria in R2 …"

E2 Lower VSL: we suggest removing "to implement appropriate freeze protection measures" from the E2 Lower VSL to ensure consistency with the wording of the Moderate, High and Severe VSLs.

HQ supports Manitoba's comment regarding the wording around extremely low ECWTs: "Some of our ECWT is below -40 degree C. In discussions with our design team, many components only have a rating down to -40 degrees C. There should be some wording around extremely low ECWTs where it is not readily available (or economically possible to pursue) the purchase of equipment with that low of a temperature rating. (To clarify: we are talking about ECWTs around -43 degrees C and ratings of -40 degrees C. We are not suggesting equipment ratings of -15 degrees C vs -43 degree ECWT)."

HQ supports Manitoba Hydro's comment : "For R3 Manitoba Hydro recommends instead of referencing the October 1, 2027 date in the Requirement remove the date in the Requirement and add the wording "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction."

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The VSLs have been updated. Attachment 1 has been updated based on industry comments. Changes to the date for ECWT were incorporated based on industry comment. The DT considered this proposed change to the Generator Cold Weather Reliability Event definition but chose not to change the definition based on industry's previous comments. The DT will consider additional changes to the Generator Cold Weather Reliability Event definition based on industry comments. The DT has made changes in Attachment 1 to account for Generator Cold Weather Constraints

Kimberly Turco - Constellation - 6

Answer	
Document Name	

Comment
Constellation supports NAGF Comments Kimberly Turco on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response
Please see responses to NAGF comments.

Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments

Answer	
Document Name	

Comment
Black Hills Corporation supports the comments submitted by NAGF.

Likes 0	
Dislikes 0	

Response
Please see responses to NAGF comments.

Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples

Answer	
Document Name	

Comment

Evergy supports and incorporates by reference the comments of the Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) and the North American Generator Forum (NAGF) on question 10

Likes 0	
Dislikes 0	

Response
Please see responses to those organization’s comments.

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	
Document Name	

Comment
Duke Energy believes guidance should be provided on the process to retire declarations that have a resolution and declarations that are no longer required. EOP-012-3 as currently written provides no details on the method of retirement and does not provide a timeframe for the implementation of actions to address the declaration. In Attachment 1, item 3, Duke Energy suggest additional criteria be provided. Duke Energy suggest the SDT clarify if declarations created under EOP-012-2 need to be transitioned to meet the requirements of EOP-012-3. If a transition is required, please provide expectations on performing the transitions and the timetable for performing these activities.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The expectation of NERC/FERCFERC and the industry should be that if the Generator Cold Weather Constraint issue is resolved, GOs will act to incorporate the measures by which it was resolved. The 36 calendar month review time period, in conjunction with the NERC Section 1600 data request, should provide clear indication when Generator Cold Weather

Constraints are resolved. Attachment 1 was updated. The Implementation Plan has clear expectations for EOP-012-2 Generator Cold Weather Constraints.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	
Document Name	
Comment	
Some of our ECWT is below -40 degree C. In discussions with our design team, some components only have a rating down to -40 degrees C. There should be some wording around extremely low ECWTs where it is not readily available (or economically possible to pursue) the purchase of equipment with that low of a temperature rating. (To clarify: we are talking about ECWTs around -43 degrees C and ratings of -40 degrees C. We are not suggesting equipment ratings of -15 degrees C vs -43 degree ECWT).	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.The DT has made changes in Attachment 1 to account for Generator Cold Weather Constraints. .	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	
Document Name	
Comment	
TVA committed to an implementation date for EOP-012-2 on 10/01/2024. This commitment required site procedure revisions, updated training, and numerous stakeholder reviews. It is recommended to go through at least one, suggest two, cold weather periods to address lessons learned prior to revising EOP-012-2. Implementation should be pushed to March 2026.	
Likes 0	
Dislikes 0	

Response
Thank you for the comments but to meet the stated FERC urgency to mitigate this risk, the Implementation Plan is based upon FERCs approval dates. Note that significant impactful language changes were needed to meet the FERC directives but those took into consideration efforts already underway by GOs and the industry.

Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	
Document Name	
Comment	
No additional comments	
Likes 0	
Dislikes 0	

Response
Thank you for the comment.

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	
Document Name	
Comment	

1. BC Hydro requests that the Technical Rationale documented by the 2021-07 Drafting Team be consolidated with the Technical Rationale developed under this 2024-03 project under a single document for consistency and easy reference.
2. BC Hydro recommend that the draft standard be reviewed for consistent use of timelines, e.g. days/months vs. calendar days/months.
3. The Requirement R8 Part 8.4 wording is ambiguous “If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with the timetables in Requirement R6 Part 6.1 or Requirement R7 Part 7.1, to begin from the date the Generator Owner is notified that the Generator

Cold Weather Constraint is invalid". Would an entity interpret this as the Corrective Action Plan(s) need to be updated within six months for R7 (per R1.1.1) or be updated within 150 days for R6 (per R6) as applicable?

4. The Generator Cold Weather CAP Extension and Constraint Process is a standalone document, which therefore may not be enforceable. As this document sets timeline expectations for CAP extensions, including for CEA, that are either not in the Requirements and/or impact the Requirements, there could be situations where if the CEA exceeds the 45-day expectation to approve an extension, the submitting GO would be in potential noncompliance to EOP-012-3. Examples include requiring an entity to submit extension requests within 60 days prior to the original CAP completion date. The actual Requirements R6 and R7 don't include timelines for submitting extension requests. Therefore, an entity could submit the extension request at any time up to the completion date and still be in compliance. BC Hydro recommends revising the process and Requirements and including any timelines in the Requirements if the entity will be expected to meet them. As well, in Step 3 of the process, the CEA could take up to 45 days to approve (or more) and therefore the entity could be past the originally proposed completion date with no approved extension request. Step 3 also says "If an extension request is denied, the selected actions in the Corrective Action Plan need to be completed in accordance with the original timetables". However, the entity may be well beyond the original timelines if the review takes more than 45 days and therefore not able to meet the original timetables. As there is no maximum time for the CEA to review and this may lead to very long review times, this will be challenging for an entity. BC Hydro recommends there be an "approval by default" if the CEA does not respond within a given period after entity's submittal to CEA.
5. BC Hydro suggests that, similar to the pre-approved Generator Cold Weather Constraints in Attachment 1, it would be helpful to also include pre-approved circumstances deemed acceptable as beyond the Generator Owner control for CAP extensions.
6. Requirements R2, R6 and R7 reference "documentation of a declaration" of an identified Generator Cold Weather Constraint in accordance with R8. Should these requirements reference the Attachment 1 instead?

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The Technical Rational developed by the 2021-07 Drafting Team was used as the framework for the 2024-03 Drafting Teams version and still contains the majority of details from the 2021-07 efforts (except where changes were needed). Consistent use of timelines was noted. Requirement R8 was changed based on industry comments. The DT defers proposed comments regarding changes in the process to NERC staff. The DT has worked with NERC staff to support changes within the Standard based on the comments received from industry. The "approval by default" approach does not meet the FERC directive for NERC to receive, review,

evaluate and confirm the validity of a Generator Cold Weather Constraint. Requirement R8 has specific actions for the entity to perform and is the correct reference.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	
Document Name	2024-03_Unofficial_Comment_Form_EOP-012-3_NSRF_20241030.docx
Comment	
MRO NSRF recommends that the standard drafting team ensure that any dates for which a registered entity is to be held to be in the requirement language and not a document that exists outside the structure of NERC Reliability Standards.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT defers proposed comments regarding changes in the process to NERC staff. The DT has worked with NERC staff to support changes within the Standard based on the comments received from industry. The DT has made changes to Requirement R8 based on industry responses.	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	
Document Name	
Comment	
The values for wind speed and duration of ECWT that are used in R2 could be more tailored to each GO location. The guidance provided by NERC on how to calculate the ECWT (2021-07 Calculating Extreme Cold Weather Temperature_082022.pdf) was very helpful, and the fact that it used statistical analysis of real-world data seem to be a good compromise between reliability and cost. The same approach should be used to calculate the wind speed and duration of ECWT that should be used as the design criteria for new units. Otherwise, new units could be designed with overly conservative ECWT, which could lead to increased cost of construction, and	

ongoing O&M costs. Additionally, if a GO is in a windier than average area of the U.S., the 20-mph wind speed may not be an accurate representation of the winds they may experience during the ECWT event.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Thomas Foltz - AEP - 5	
Answer	
Document Name	
Comment	
The obligation in R6.1.6 states the CAP needs to include a timetable for implementing freeze protection measure to “similar” generating units owned by the Generator Owner. It is unclear how the term “similar” is to be applied, as some Generator Operators operate in a large footprint. Does the term “similar” refer to the generating unit design, the generating unit’s geographical location, or perhaps even both? Likewise, “similar equipment freeze protection measures” is problematic, because the word “similar” could be understood as being tied to either the equipment or the measures. Rather than stating “A review of applicability to similar equipment freeze protection measures”, AEP recommends instead using “A review of the freeze protection measures used for similar critical components.” The R6.1.6 obligation to perform “A review of applicability to similar equipment freeze protection measures at generating units owned by the Generator Owner” needs further clarification. A Generator Cold Weather Reliability Event may be the result of either a failed equipment freeze protection measure or due to inadequate freeze protection measures. The obligation to perform an applicability review should only be required due to a Generator Cold Weather Reliability Event resulting from inadequate freeze protection measures.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. The DT updated the wording to be “freeze protection measures on similar equipment”. The freezing issue may have occurred on an “unidentified” Generator Cold Weather Critical Component and the suggested language may mute efforts to correct the issue. A Generator Cold Weather Reliability Event could be caused by either scenario (and may speak to an entity’s approach to maintenance and inspection).

End of Report

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Reminder
Standards Announcement
Project 2024-03 Revisions to EOP-012-2

Initial Ballots and Non-binding Poll Open through November 5, 2024

Now Available

Initial ballots for draft one of **EOP-012-3 Extreme Cold Weather Preparedness and Operations** and non-binding poll of the associated Violation Risk Factors and Violation Severity Levels are open through **8 p.m. Eastern, Tuesday, November 5, 2024**.

The Standards Committee approved the following waiver of provisions of the Standard Processes Manual (SPM) for Project 2024-03 Revisions to EOP-012-2:

- Informal comment period for SAR reduced from 30 days to as few as 15 days (Section 4.2);
- Initial formal comment and ballot period(s) reduced from 45 days to as little as 20 days, with the ballot pool formed concurrently during the first 10 days of the initial formal comment period, and with the ballot and non-binding poll of Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) conducted concurrently during the last 5 days of the comment period (Sections 4.8 and 4.9);
- Additional formal comment and ballot period(s) reduced from 30 days to as little as 15 days, with the ballot and non-binding poll of VRFs and VSLs conducted concurrently during the last 5 days of the comment period (Sections 4.9 and 4.12);
- Final ballot period(s) reduced from 10 days to as little as 5 days (Section 4.13).

Reminder Regarding Corporate RBB Memberships

Under the NERC Rules of Procedure, each entity and its affiliates is collectively permitted one voting membership per Registered Ballot Body Segment. Each entity that undergoes a change in corporate structure (such as a merger or acquisition) that results in the entity or affiliated entities having more than the one permitted representative in a particular Segment must withdraw the duplicate membership(s) prior to joining new ballot pools or voting on anything as part of an existing ballot pool. Contact ballotadmin@nerc.net to assist with the removal of any duplicate registrations.

Balloting

Members of the ballot pools associated with this project can log in and submit their votes by accessing the Standards Balloting and Commenting System (SBS) here.

- *Contact NERC IT support directly at https://support.nerc.net/ (Monday – Friday, 8 a.m. - 5 p.m. Eastern) for problems regarding accessing the SBS due to a forgotten password, incorrect credential error messages, or system lock-out.*

- *Passwords expire every **6 months** and must be reset.*
- *The SBS **is not** supported for use on mobile devices.*
- *Please be mindful of ballot and comment period closing dates. We ask to **allow at least 48 hours** for NERC support staff to assist with inquiries. Therefore, it is recommended that users try logging into their SBS accounts **prior to the last day** of a comment/ballot period.*

Next Steps

The ballot results will be announced and posted on the project page. The drafting team will review all responses received during the comment period and determine the next steps of the project.

For information on the Standards Development Process, refer to the Standard Processes Manual.

For more information or assistance, contact Senior Standards Developer, Ben Wu (via email) or at 470-542-6882. Subscribe to this project's observer mailing list by selecting "NERC Email Distribution Lists" from the "Service" drop-down menu and specify “Project 2024-03 Revisions to EOP-012-2 observer list” in the Description Box.

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NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2024-03 Revisions to EOP-012-2

Formal Comment Period Open through November 5, 2024
Ballot Pools Forming through October 28, 2024

Now Available

A 20-day formal comment period for draft one of **EOP-012-3 Extreme Cold Weather Preparedness and Operations** is open through **8 p.m. Eastern, Tuesday, November 5, 2024**.

The Standards Committee approved the following waiver of provisions of the Standard Processes Manual (SPM) for Project 2024-03 Revisions to EOP-012-2:

- Informal comment period for SAR reduced from 30 days to as few as 15 days (Section 4.2);
- Initial formal comment and ballot period(s) reduced from 45 days to as little as 20 days, with the ballot pool formed concurrently during the first 10 days of the initial formal comment period, and with the ballot and non-binding poll of Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) conducted concurrently during the last 5 days of the comment period (Sections 4.8 and 4.9);
- Additional formal comment and ballot period(s) reduced from 30 days to as little as 15 days, with the ballot and non-binding poll of VRFs and VSLs conducted concurrently during the last 5 days of the comment period (Sections 4.9 and 4.12);
- Final ballot period(s) reduced from 10 days to as little as 5 days (Section 4.13).

Commenting

Use the Standards Balloting and Commenting System (SBS) to submit comments. An unofficial Word version of the comment form is posted on the project page.

Reminder Regarding Corporate RBB Memberships

Under the NERC Rules of Procedure, each entity and its affiliates is collectively permitted one voting membership per Registered Ballot Body Segment. Each entity that undergoes a change in corporate structure (such as a merger or acquisition) that results in the entity or affiliated entities having more than the one permitted representative in a particular Segment must withdraw the duplicate membership(s) prior to joining new ballot pools or voting on anything as part of an existing ballot pool. Contact ballotadmin@nerc.net to assist with the removal of any duplicate registrations.

Ballot Pools

Ballot pools are being formed through **8 p.m. Eastern, Monday, October 28, 2024.** Registered Ballot Body members can join the ballot pools here.

- *Contact NERC IT support directly at https://support.nerc.net/ (Monday – Friday, 8 a.m. - 5 p.m. Eastern) for problems regarding accessing the SBS due to a forgotten password, incorrect credential error messages, or system lock-out.*
- *Passwords expire every **6 months** and must be reset.*
- *The SBS **is not** supported for use on mobile devices.*
- *Please be mindful of ballot and comment period closing dates. We ask to **allow at least 48 hours** for NERC support staff to assist with inquiries. Therefore, it is recommended that users try logging into their SBS accounts **prior to the last day** of a comment/ballot period.*

Next Steps

Initial ballots for the standard and implementation plan, as well as a non-binding poll of the associated Violation Risk Factors and Violation Severity Levels will be conducted **October 31 – November 5, 2024**.

For information on the Standards Development Process, refer to the Standard Processes Manual.

For more information or assistance, contact Senior Standards Developer, Ben Wu (via email) or at 470-542-6882. Subscribe to this project's observer mailing list by selecting "NERC Email Distribution Lists" from the "Service" drop-down menu and specify “Project 2024-03 Revisions to EOP-012-2 observer list” in the Description Box.

North American Electric Reliability Corporation
3353 Peachtree Rd, NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

BALLOT RESULTS

Comment: View Comment Results (/CommentResults/Index/356)
Ballot Name: 2024-03 Revisions to EOP-012-2 | Draft 1 EOP-012-3 AB 2 ST
Voting Start Date: 12/16/2024 12:01:00 AM
Voting End Date: 12/20/2024 8:00:00 PM
Ballot Type: ST
Ballot Activity: AB
Ballot Series: 2
Total # Votes: 217
Total Ballot Pool: 244
Quorum: 88.93
Quorum Established Date: 12/20/2024 12:14:45 PM
Weighted Segment Value: 44.54

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes w/ Comment	Negative Fraction w/ Comment	Negative Votes w/o Comment	Abstain	No Vote
Segment: 1	64	1	20	0.392	31	0.608	0	5	8
Segment: 2	4	0.4	0	0	4	0.4	0	0	0
Segment: 3	53	1	16	0.41	23	0.59	0	7	7
Segment: 4	12	0.9	4	0.4	5	0.5	0	2	1
Segment: 5	63	1	17	0.34	33	0.66	0	5	8
Segment: 6	42	1	17	0.486	18	0.514	0	4	3
Segment: 7	0	0	0	0	0	0	0	0	0
Segment: 8	0	0	0	0	0	0	0	0	0

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes w/ Comment	Negative Fraction w/ Comment	Negative Votes w/o Comment	Abstain	No Vote
Segment: 9	0	0	0	0	0	0	0	0	0
Segment: 10	6	0.6	6	0.6	0	0	0	0	0
Totals:	244	5.9	80	2.628	114	3.272	0	23	27

BALLOT POOL MEMBERS

Show All entries Search: Search

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	AEP - AEP Service Corporation	Dennis Sauriol		Affirmative	N/A
1	Allete - Minnesota Power, Inc.	Hillary Creurer		Negative	Comments Submitted
1	Ameren - Ameren Services	Tamara Evey		Negative	Third-Party Comments
1	APS - Arizona Public Service Co.	Daniela Atanasovski		Negative	Comments Submitted
1	Associated Electric Cooperative, Inc.	Mark Riley		Affirmative	N/A
1	Avista - Avista Corporation	Mike Magruder		Negative	Comments Submitted
1	Balancing Authority of Northern California	Kevin Smith	Tim Kelley	Affirmative	N/A
1	Basin Electric Power Cooperative	David Rudolph		Negative	Third-Party Comments
1	BC Hydro and Power Authority	Adrian Andreoiu		Abstain	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Berkshire Hathaway Energy - MidAmerican Energy Co.	Terry Harbour		None	N/A
1	Black Hills Corporation	Trevor Rombough		Negative	Comments Submitted
1	Bonneville Power Administration	Kamala Rogers-Holliday		None	N/A
1	CenterPoint Energy Houston Electric, LLC	Daniela Hammons		Affirmative	N/A
1	Central Iowa Power Cooperative	Kevin Lyons		Negative	Third-Party Comments
1	City Utilities of Springfield, Missouri	Michael Bowman		Affirmative	N/A
1	Colorado Springs Utilities	Corey Walker		Negative	Third-Party Comments
1	Con Ed - Consolidated Edison Co. of New York	Dermot Smyth		Affirmative	N/A
1	Dominion - Dominion Virginia Power	Steven Belle		Affirmative	N/A
1	Duke Energy	Katherine Street		Negative	Comments Submitted
1	Edison International - Southern California Edison Company	Robert Blackney		Negative	Comments Submitted
1	Entergy	Brian Lindsey		Negative	Comments Submitted
1	Evergy	Kevin Frick	Hayden Maples	Negative	Comments Submitted
1	Eversource Energy	Joshua London		Abstain	N/A
1	Exelon	Daniel Gacek		Abstain	N/A
1	FirstEnergy - FirstEnergy Corporation	John Martinez		Affirmative	N/A
1	Glencoe Light and Power Commission	Terry Volkmann		Negative	Third-Party Comments

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Great River Energy	Gordon Pietsch		Affirmative	N/A
1	Hydro-Quebec (HQ)	Nicolas Turcotte	Chantal Mazza	Negative	Comments Submitted
1	IDACORP - Idaho Power Company	Sean Steffensen		None	N/A
1	Imperial Irrigation District	Jesus Sammy Alcaraz	Denise Sanchez	Affirmative	N/A
1	International Transmission Company Holdings Corporation	Michael Moltane	Allie Gavin	Abstain	N/A
1	KAMO Electric Cooperative	Micah Breedlove		Affirmative	N/A
1	Long Island Power Authority	Isidoro Behar		None	N/A
1	M and A Electric Power Cooperative	William Price		Affirmative	N/A
1	Manitoba Hydro	Nazra Gladu		Negative	Comments Submitted
1	MEAG Power	David Weekley	Rebika Yitna	None	N/A
1	Minnkota Power Cooperative Inc.	Theresa Allard	Nikki Carson-Marquis	Negative	Third-Party Comments
1	Muscatine Power and Water	Andrew Kurriger		Negative	Third-Party Comments
1	N.W. Electric Power Cooperative, Inc.	Mark Ramsey		Affirmative	N/A
1	National Grid USA	Jacqueline Ryan		Negative	Third-Party Comments
1	NB Power Corporation	Jeffrey Streifling		Negative	Comments Submitted
1	Nebraska Public Power District	Jamison Cawley		Negative	Third-Party Comments
1	NiSource - Northern Indiana Public Service Co.	Alison Nickells		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Northeast Missouri Electric Power Cooperative	Brett Douglas		Affirmative	N/A
1	OGE Energy - Oklahoma Gas and Electric Co.	Terri Pyle		Negative	Third-Party Comments
1	Omaha Public Power District	Doug Peterchuck		Negative	Third-Party Comments
1	OTP - Otter Tail Power Company	Charles Wicklund		Negative	Third-Party Comments
1	Platte River Power Authority	Marissa Archie		Negative	Third-Party Comments
1	PNM Resources - Public Service Company of New Mexico	Lynn Goldstein		Negative	Comments Submitted
1	Portland General Electric Co.	Brooke Jockin		None	N/A
1	PPL Electric Utilities Corporation	Michelle McCartney Longo		Affirmative	N/A
1	Public Utility District No. 2 of Grant County, Washington	Joanne Anderson		Abstain	N/A
1	Salt River Project	Laura Somak	Israel Perez	Affirmative	N/A
1	Santee Cooper	Chris Wagner		Negative	Comments Submitted
1	SaskPower	Wayne Guttormson		None	N/A
1	Sempra - San Diego Gas and Electric	Mohamed Derbas		Negative	Third-Party Comments
1	Southern Company - Southern Company Services, Inc.	Matt Carden		Affirmative	N/A
1	Sunflower Electric Power Corporation	Paul Mehlhaff		None	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Tacoma Public Utilities (Tacoma, WA)	John Merrell	Jennie Wike	Negative	Third-Party Comments
1	Tennessee Valley Authority	David Plumb		Negative	Comments Submitted
1	Tri-State G and T Association, Inc.	Donna Wood		Negative	Comments Submitted
1	U.S. Bureau of Reclamation	Richard Jackson		Negative	Comments Submitted
1	Unisource - Tucson Electric Power Co.	Jessica Cordero		Affirmative	N/A
1	Xcel Energy, Inc.	Eric Barry		Affirmative	N/A
2	California ISO	Darcy O'Connell		Negative	Comments Submitted
2	Electric Reliability Council of Texas, Inc.	Kennedy Meier		Negative	Comments Submitted
2	PJM Interconnection, L.L.C.	Thomas Foster	Elizabeth Davis	Negative	Third-Party Comments
2	Southwest Power Pool, Inc. (RTO)	Joshua Phillips		Negative	Third-Party Comments
3	AEP	Leshel Hutchings		Affirmative	N/A
3	Ameren - Ameren Services	David Jendras Sr	Nick Leathers	Negative	Comments Submitted
3	APS - Arizona Public Service Co.	Jessica Lopez		Negative	Comments Submitted
3	Arkansas Electric Cooperative Corporation	Ayslynn Mcavoy		Abstain	N/A
3	Associated Electric Cooperative, Inc.	Todd Bennett		Affirmative	N/A
3	Avista - Avista Corporation	Robert Follini		Negative	Comments Submitted
3	BC Hydro and Power Authority	Ming Jiang		Abstain	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	Berkshire Hathaway Energy - MidAmerican Energy Co.	Joseph Amato		Negative	Comments Submitted
3	Black Hills Corporation	Josh Combs		Negative	Comments Submitted
3	Bonneville Power Administration	Ron Sporseen		Abstain	N/A
3	Buckeye Power, Inc.	Tom Schmidt	Ryan Strom	Abstain	N/A
3	Central Electric Power Cooperative (Missouri)	Adam Weber		Affirmative	N/A
3	Con Ed - Consolidated Edison Co. of New York	Lincoln Burton		Affirmative	N/A
3	CPS Energy	Juan Gomez		Abstain	N/A
3	Dominion - Dominion Virginia Power	Victoria Crider		Affirmative	N/A
3	Edison International - Southern California Edison Company	Romel Aquino		Negative	Comments Submitted
3	Entergy	James Keele		Negative	Comments Submitted
3	Evergy	Marcus Moor	Hayden Maples	Negative	Comments Submitted
3	Eversource Energy	Vicki O'Leary		None	N/A
3	Exelon	Kinte Whitehead		Abstain	N/A
3	FirstEnergy - FirstEnergy Corporation	Aaron Ghodooshim		Affirmative	N/A
3	Great River Energy	Michael Brytowski		Affirmative	N/A
3	KAMO Electric Cooperative	Tony Gott		Affirmative	N/A
3	M and A Electric Power Cooperative	Gary Dollins		None	N/A
3	Manitoba Hydro	Mike Smith		Negative	Comments Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	MEAG Power	Roger Brand	Rebika Yitna	None	N/A
3	MGE Energy - Madison Gas and Electric Co.	Benjamin Widder		Negative	Third-Party Comments
3	Muscatine Power and Water	Seth Shoemaker		Negative	Third-Party Comments
3	National Grid USA	Brian Shanahan		Negative	Third-Party Comments
3	New York Power Authority	Richard Machado		Negative	Third-Party Comments
3	NextEra Energy - Florida Power and Light Co.	Karen Demos		None	N/A
3	NiSource - Northern Indiana Public Service Co.	Steven Taddeucci		Affirmative	N/A
3	Northeast Missouri Electric Power Cooperative	Skyler Wiegmann		Affirmative	N/A
3	Northern California Power Agency	Michael Whitney	Mason Jones	None	N/A
3	NW Electric Power Cooperative, Inc.	Heath Henry		None	N/A
3	OGE Energy - Oklahoma Gas and Electric Co.	Donald Hargrove		Negative	Third-Party Comments
3	Omaha Public Power District	David Heins		Negative	Third-Party Comments
3	OTP - Otter Tail Power Company	Wendi Olson		Negative	Third-Party Comments
3	Platte River Power Authority	Richard Kiess		Negative	Third-Party Comments
3	PNM Resources - Public Service Company of New Mexico	Amy Wesselkamper		Negative	Comments Submitted
3	Portland General Electric Co.	Mayra Franco		Abstain	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	PPL - Louisville Gas and Electric Co.	James Frank		None	N/A
3	Sacramento Municipal Utility District	Nicole Looney	Tim Kelley	Affirmative	N/A
3	Salt River Project	Mathew Weber	Israel Perez	Affirmative	N/A
3	Santee Cooper	Vicky Budreau		Negative	Comments Submitted
3	Sempra - San Diego Gas and Electric	Bryan Bennett		Negative	Third-Party Comments
3	Sho-Me Power Electric Cooperative	Jarrod Murdaugh		Affirmative	N/A
3	Southern Company - Alabama Power Company	Joel Dembowski		Affirmative	N/A
3	Southern Indiana Gas and Electric Co.	Ryan Snyder		Affirmative	N/A
3	Tacoma Public Utilities (Tacoma, WA)	John Nierenberg	Jennie Wike	Negative	Third-Party Comments
3	Tennessee Valley Authority	Ian Grant		Negative	Comments Submitted
3	WEC Energy Group, Inc.	Christine Kane		Negative	Comments Submitted
3	Xcel Energy, Inc.	Nicholas Friebel		Affirmative	N/A
4	Alliant Energy Corporation Services, Inc.	Larry Heckert		Negative	Third-Party Comments
4	Arkansas Electric Cooperative Corporation	Jenni Sudduth		None	N/A
4	Buckeye Power, Inc.	Jason Procuniar	Ryan Strom	Abstain	N/A
4	DTE Energy	Patricia Ireland		Affirmative	N/A
4	FirstEnergy - FirstEnergy Corporation	Mark Garza		Affirmative	N/A
4	MGE Energy - Madison Gas and Electric Co.	Ray Mangiulli		Negative	Third-Party Comments

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
4	Northern California Power Agency	Marty Hostler		Negative	Comments Submitted
4	Sacramento Municipal Utility District	Foung Mua	Tim Kelley	Affirmative	N/A
4	Tacoma Public Utilities (Tacoma, WA)	Hien Ho	Jennie Wike	Negative	Third-Party Comments
4	Utility Services, Inc.	Carver Powers		Affirmative	N/A
4	WEC Energy Group, Inc.	Candace Morakinyo		Negative	Comments Submitted
4	Western Power Pool	Kevin Conway		Abstain	N/A
5	AEP	Thomas Foltz		Affirmative	N/A
5	AES - AES Corporation	Ruchi Shah		Negative	Comments Submitted
5	Ameren - Ameren Missouri	Sam Dwyer		None	N/A
5	American Municipal Power	Amy Ritts		Affirmative	N/A
5	APS - Arizona Public Service Co.	Andrew Smith		Negative	Comments Submitted
5	Associated Electric Cooperative, Inc.	Chuck Booth		Affirmative	N/A
5	Basin Electric Power Cooperative	Amanda Wangler		Negative	Third-Party Comments
5	BC Hydro and Power Authority	Christine Jennings		Abstain	N/A
5	Berkshire Hathaway - NV Energy	Dwanique Spiller		Negative	Comments Submitted
5	Black Hills Corporation	Sheila Suurmeier		Negative	Comments Submitted
5	Bonneville Power Administration	Milli Chennell		Abstain	N/A
5	Buckeye Power, Inc.	Kevin Zemanek	Ryan Strom	Abstain	N/A
5	Calpine Corporation	Whitney Wallace		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	Cogentrix Energy Power Management, LLC	Gerry Adamski		Affirmative	N/A
5	Colorado Springs Utilities	Jeffrey Icke		Negative	Third-Party Comments
5	Con Ed - Consolidated Edison Co. of New York	Michelle Pagano		Affirmative	N/A
5	Constellation	Alison MacKellar		None	N/A
5	Cowlitz County PUD	Deanna Carlson		None	N/A
5	Dairyland Power Cooperative	Tommy Drea		Negative	Third-Party Comments
5	DTE Energy - Detroit Edison Company	Mohamad Elhusseini		Affirmative	N/A
5	Duke Energy	Dale Goodwine		Negative	Comments Submitted
5	Edison International - Southern California Edison Company	Selene Willis		Negative	Comments Submitted
5	Enel Green Power	Natalie Johnson		Abstain	N/A
5	Evergy	Jeremy Harris	Hayden Maples	Negative	Comments Submitted
5	FirstEnergy - FirstEnergy Corporation	Matthew Augustin		Affirmative	N/A
5	Greenville Electric Utility System	Ashley Cotton		None	N/A
5	Greybeard Compliance Services, LLC	Mike Gabriel		Negative	Third-Party Comments
5	Hydro-Quebec (HQ)	Junji Yamaguchi	Chantal Mazza	Negative	Comments Submitted
5	Imperial Irrigation District	Tino Zaragoza	Denise Sanchez	Affirmative	N/A
5	Invenergy LLC	Rhonda Jones		Negative	Comments Submitted
5	Lincoln Electric System	Brittany Millard		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	Manitoba Hydro	Kristy-Lee Young		Negative	Comments Submitted
5	Muscatine Power and Water	Chance Back		Negative	Third-Party Comments
5	National Grid USA	Robin Berry		Negative	Third-Party Comments
5	Nebraska Public Power District	Ronald Bender		Negative	Third-Party Comments
5	New York Power Authority	Zahid Qayyum		Negative	Third-Party Comments
5	NextEra Energy	Richard Vendetti		Negative	Comments Submitted
5	NRG - NRG Energy, Inc.	Patricia Lynch		Affirmative	N/A
5	OGE Energy - Oklahoma Gas and Electric Co.	Patrick Wells		Negative	Third-Party Comments
5	Oglethorpe Power Corporation	Donna Johnson		Affirmative	N/A
5	Oklahoma Municipal Power Authority	Patrick Tuttle		Affirmative	N/A
5	Omaha Public Power District	Kayleigh Wilkerson		Negative	Third-Party Comments
5	Ontario Power Generation Inc.	Constantin Chitescu		Negative	Comments Submitted
5	OTP - Otter Tail Power Company	Stacy Wahlund		Negative	Third-Party Comments
5	Pacific Gas and Electric Company	Tyler Brun	Bob Cardle	Negative	Comments Submitted
5	Platte River Power Authority	Jon Osell		Negative	Third-Party Comments
5	Portland General Electric Co.	Ryan Olson		Abstain	N/A
5	Public Utility District No. 1 of Snohomish County	Becky Burden		Negative	Comments Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	Sacramento Municipal Utility District	Ryder Couch	Tim Kelley	Affirmative	N/A
5	Santee Cooper	Carey Salisbury		Negative	Comments Submitted
5	Seminole Electric Cooperative, Inc.	Melanie Wong		None	N/A
5	Sempra - San Diego Gas and Electric	Jennifer Wright	Jennifer Lapaix	Negative	Third-Party Comments
5	Southern Company - Southern Company Generation	Leslie Burke		Affirmative	N/A
5	Southern Indiana Gas and Electric Co.	Larry Rogers		Affirmative	N/A
5	Tacoma Public Utilities (Tacoma, WA)	Ozan Ferrin	Jennie Wike	Negative	Third-Party Comments
5	Talen Generation, LLC	Donald Lock		Negative	Comments Submitted
5	Tennessee Valley Authority	Darren Boehm		None	N/A
5	TransAlta Corporation	Ashley Scheelar		None	N/A
5	Tri-State G and T Association, Inc.	Sergio Banuelos		Negative	Comments Submitted
5	U.S. Bureau of Reclamation	Wendy Kalidass		None	N/A
5	Vistra Energy	Daniel Roethemeyer	David Vickers	Negative	Comments Submitted
5	WEC Energy Group, Inc.	Michelle Hribar		Negative	Comments Submitted
5	Xcel Energy, Inc.	Gerry Huitt		Affirmative	N/A
6	AEP	Mathew Miller		Affirmative	N/A
6	Ameren - Ameren Services	Robert Quinlivan		Negative	Third-Party Comments
6	APS - Arizona Public Service Co.	Marcus Bortman		Negative	Comments Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
6	Arkansas Electric Cooperative Corporation	Bruce Walkup		Abstain	N/A
6	Associated Electric Cooperative, Inc.	Brian Ackermann		Affirmative	N/A
6	Austin Energy	Imane Mrini		None	N/A
6	Basin Electric Power Cooperative	Eve G Stromer		Negative	Third-Party Comments
6	Black Hills Corporation	Rachel Schuldt		Negative	Comments Submitted
6	Bonneville Power Administration	Tanner Brier		Abstain	N/A
6	Cleco Corporation	Robert Hirchak		Affirmative	N/A
6	Con Ed - Consolidated Edison Co. of New York	Jason Chandler		Affirmative	N/A
6	Constellation	Kimberly Turco		Affirmative	N/A
6	Dominion - Dominion Resources, Inc.	Sean Bodkin		Affirmative	N/A
6	Duke Energy	John Sturgeon		Negative	Comments Submitted
6	Edison International - Southern California Edison Company	Stephanie Kenny		Negative	Comments Submitted
6	Entergy	Julie Hall		Negative	Comments Submitted
6	Evergy	Tiffany Lake	Hayden Maples	Negative	Comments Submitted
6	FirstEnergy - FirstEnergy Corporation	Stacey Sheehan		Affirmative	N/A
6	Imperial Irrigation District	Diana Torres	Denise Sanchez	Affirmative	N/A
6	Invenergy LLC	Colin Chilcoat		Negative	Comments Submitted
6	Lincoln Electric System	Eric Ruskamp		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
6	Manitoba Hydro	Brandin Stoesz		Negative	Comments Submitted
6	Muscatine Power and Water	Nicholas Burns		Negative	Third-Party Comments
6	New York Power Authority	Shelly Dineen		Negative	Third-Party Comments
6	NextEra Energy - Florida Power and Light Co.	Justin Welty		Negative	Comments Submitted
6	NiSource - Northern Indiana Public Service Co.	Rebecca Blair		Affirmative	N/A
6	NRG - NRG Energy, Inc.	Martin Sidor		Affirmative	N/A
6	Omaha Public Power District	Shonda McCain		Negative	Third-Party Comments
6	Platte River Power Authority	Sabrina Martz		Negative	Third-Party Comments
6	Portland General Electric Co.	Stefanie Burke		Abstain	N/A
6	Powerex Corporation	Raj Hundal		Abstain	N/A
6	Sacramento Municipal Utility District	Charles Norton	Tim Kelley	Affirmative	N/A
6	Salt River Project	Timothy Singh	Israel Perez	Affirmative	N/A
6	Santee Cooper	Marty Watson		Negative	Comments Submitted
6	Seattle City Light	Daren Brubaker		None	N/A
6	Seminole Electric Cooperative, Inc.	Bret Galbraith		None	N/A
6	Southern Company - Southern Company Generation and Energy Marketing	Matthew O'neal		Affirmative	N/A
6	Southern Indiana Gas and Electric Co.	Kati Barr		Affirmative	N/A
6	Tennessee Valley Authority	Jeffrey Powell		Negative	Comments Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
6	WEC Energy Group, Inc.	David Boeshaar		Negative	Comments Submitted
6	Western Area Power Administration	Jennifer Neville		Affirmative	N/A
6	Xcel Energy, Inc.	Steve Szablya		Affirmative	N/A
10	Midwest Reliability Organization	Mark Flanary		Affirmative	N/A
10	New York State Reliability Council	Wesley Yeomans		Affirmative	N/A
10	ReliabilityFirst	Tremayne Brown	Greg Sorenson	Affirmative	N/A
10	SERC Reliability Corporation	Dave Krueger		Affirmative	N/A
10	Texas Reliability Entity, Inc.	Rachel Coyne		Affirmative	N/A
10	Western Electricity Coordinating Council	Steven Rueckert		Affirmative	N/A

Previous 1 Next

Showing 1 to 244 of 244 entries

BALLOT RESULTS

Comment: View Comment Results (/CommentResults/Index/354)
Ballot Name: 2024-03 Revisions to EOP-012-2 | Draft 1 Implementation Plan IN 1 OT
Voting Start Date: 10/31/2024 12:01:00 AM
Voting End Date: 11/5/2024 8:00:00 PM
Ballot Type: OT
Ballot Activity: IN
Ballot Series: 1
Total # Votes: 219
Total Ballot Pool: 240
Quorum: 91.25
Quorum Established Date: 11/5/2024 2:45:33 PM
Weighted Segment Value: 45.86

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes w/ Comment	Negative Fraction w/ Comment	Negative Votes w/o Comment	Abstain	No Vote
Segment: 1	64	1	17	0.321	36	0.679	0	8	3
Segment: 2	3	0.3	2	0.2	1	0.1	0	0	0
Segment: 3	53	1	18	0.419	25	0.581	0	6	4
Segment: 4	12	0.8	4	0.4	4	0.4	0	1	3
Segment: 5	61	1	14	0.275	37	0.725	0	4	6
Segment: 6	41	1	15	0.455	18	0.545	0	3	5
Segment: 7	0	0	0	0	0	0	0	0	0
Segment: 8	0	0	0	0	0	0	0	0	0

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes w/ Comment	Negative Fraction w/ Comment	Negative Votes w/o Comment	Abstain	No Vote
Segment: 9	0	0	0	0	0	0	0	0	0
Segment: 10	6	0.5	5	0.5	0	0	0	1	0
Totals:	240	5.6	75	2.568	121	3.032	0	23	21

BALLOT POOL MEMBERS

Show All entries Search: Search

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
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1	Allete - Minnesota Power, Inc.	Hillary Creurer		Negative	Comments Submitted
1	Ameren - Ameren Services	Tamara Evey		Negative	Third-Party Comments
1	APS - Arizona Public Service Co.	Daniela Atanasovski		Affirmative	N/A
1	Associated Electric Cooperative, Inc.	Mark Riley		Affirmative	N/A
1	Avista - Avista Corporation	Mike Magruder		Negative	Comments Submitted
1	Balancing Authority of Northern California	Kevin Smith	Tim Kelley	Affirmative	N/A
1	Basin Electric Power Cooperative	David Rudolph		Negative	Third-Party Comments
1	BC Hydro and Power Authority	Adrian Andreoiu		Negative	Comments Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Berkshire Hathaway Energy - MidAmerican Energy Co.	Terry Harbour		Negative	Comments Submitted
1	Black Hills Corporation	Travis Grablander		Negative	Comments Submitted
1	Bonneville Power Administration	Kamala Rogers-Holliday		Abstain	N/A
1	CenterPoint Energy Houston Electric, LLC	Daniela Hammons		Abstain	N/A
1	Central Iowa Power Cooperative	Kevin Lyons		Negative	Third-Party Comments
1	City Utilities of Springfield, Missouri	Michael Bowman		Negative	Comments Submitted
1	Colorado Springs Utilities	Corey Walker		Negative	Third-Party Comments
1	Con Ed - Consolidated Edison Co. of New York	Dermot Smyth		Affirmative	N/A
1	Dominion - Dominion Virginia Power	Steven Belle		Negative	Comments Submitted
1	Duke Energy	Katherine Street		Negative	Comments Submitted
1	Edison International - Southern California Edison Company	Robert Blackney		Negative	Comments Submitted
1	Entergy	Brian Lindsey		Affirmative	N/A
1	Evergy	Kevin Frick	Hayden Maples	Negative	Comments Submitted
1	Eversource Energy	Joshua London		Negative	Comments Submitted
1	Exelon	Daniel Gacek		Abstain	N/A
1	FirstEnergy - FirstEnergy Corporation	John Martinez		Affirmative	N/A
1	Glencoe Light and Power Commission	Terry Volkmann		Negative	Third-Party Comments

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Great River Energy	Gordon Pietsch		Negative	Third-Party Comments
1	Hydro-Quebec (HQ)	Nicolas Turcotte	Chantal Mazza	Negative	Comments Submitted
1	IDACORP - Idaho Power Company	Sean Steffensen		Affirmative	N/A
1	Imperial Irrigation District	Jesus Sammy Alcaraz	Denise Sanchez	Affirmative	N/A
1	International Transmission Company Holdings Corporation	Michael Moltane	Allie Gavin	Abstain	N/A
1	KAMO Electric Cooperative	Micah Breedlove		Affirmative	N/A
1	Long Island Power Authority	Isidoro Behar		Abstain	N/A
1	M and A Electric Power Cooperative	William Price		Affirmative	N/A
1	Manitoba Hydro	Nazra Gladu		Negative	Comments Submitted
1	MEAG Power	David Weekley	Rebika Yitna	Abstain	N/A
1	Minnkota Power Cooperative Inc.	Theresa Allard	Nikki Carson-Marquis	Negative	Third-Party Comments
1	Muscatine Power and Water	Andrew Kurriger		Negative	Third-Party Comments
1	N.W. Electric Power Cooperative, Inc.	Mark Ramsey		Affirmative	N/A
1	National Grid USA	Michael Jones		Negative	Third-Party Comments
1	NB Power Corporation	Jeffrey Streifling		Negative	Comments Submitted
1	Nebraska Public Power District	Jamison Cawley		Negative	Third-Party Comments
1	NiSource - Northern Indiana Public Service Co.	Alison Nickells		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Northeast Missouri Electric Power Cooperative	Brett Douglas		Affirmative	N/A
1	OGE Energy - Oklahoma Gas and Electric Co.	Terri Pyle		Negative	Third-Party Comments
1	Omaha Public Power District	Doug Peterchuck		Negative	Third-Party Comments
1	OTP - Otter Tail Power Company	Charles Wicklund		Negative	Third-Party Comments
1	Platte River Power Authority	Marissa Archie		Affirmative	N/A
1	PNM Resources - Public Service Company of New Mexico	Lynn Goldstein		Negative	Comments Submitted
1	Portland General Electric Co.	Brooke Jockin		None	N/A
1	PPL Electric Utilities Corporation	Michelle McCartney Longo		Negative	Third-Party Comments
1	Public Utility District No. 2 of Grant County, Washington	Joanne Anderson		Abstain	N/A
1	Salt River Project	Laura Somak	Israel Perez	Affirmative	N/A
1	Santee Cooper	Chris Wagner		Negative	Comments Submitted
1	SaskPower	Wayne Guttormson		Abstain	N/A
1	Sempra - San Diego Gas and Electric	Mohamed Derbas		Negative	Third-Party Comments
1	Southern Company - Southern Company Services, Inc.	Matt Carden		Negative	Comments Submitted
1	Sunflower Electric Power Corporation	Paul Mehlhaff		None	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Tacoma Public Utilities (Tacoma, WA)	John Merrell	Jennie Wike	None	N/A
1	Tennessee Valley Authority	David Plumb		Negative	Comments Submitted
1	Tri-State G and T Association, Inc.	Donna Wood		Affirmative	N/A
1	U.S. Bureau of Reclamation	Richard Jackson		Negative	Comments Submitted
1	Unisource - Tucson Electric Power Co.	Jessica Cordero		Negative	Comments Submitted
1	Xcel Energy, Inc.	Eric Barry		Negative	Third-Party Comments
2	Electric Reliability Council of Texas, Inc.	Kennedy Meier		Affirmative	N/A
2	PJM Interconnection, L.L.C.	Thomas Foster	Elizabeth Davis	Affirmative	N/A
2	Southwest Power Pool, Inc. (RTO)	Joshua Phillips		Negative	Comments Submitted
3	AEP	Leshel Hutchings		Affirmative	N/A
3	Ameren - Ameren Services	David Jendras Sr	Nick Leathers	Negative	Comments Submitted
3	APS - Arizona Public Service Co.	Jessica Lopez		Affirmative	N/A
3	Arkansas Electric Cooperative Corporation	Ayslynn Mcavoy		None	N/A
3	Associated Electric Cooperative, Inc.	Todd Bennett		Affirmative	N/A
3	Avista - Avista Corporation	Robert Follini		Negative	Comments Submitted
3	BC Hydro and Power Authority	Ming Jiang		Negative	Comments Submitted
3	Berkshire Hathaway Energy - MidAmerican Energy Co.	Joseph Amato		Negative	Comments Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	Black Hills Corporation	Josh Combs		Negative	Comments Submitted
3	Bonneville Power Administration	Ron Sporseen		Abstain	N/A
3	Buckeye Power, Inc.	Tom Schmidt	Ryan Strom	Negative	Third-Party Comments
3	Central Electric Power Cooperative (Missouri)	Adam Weber		Affirmative	N/A
3	Con Ed - Consolidated Edison Co. of New York	Lincoln Burton		Affirmative	N/A
3	CPS Energy	Juan Gomez		Abstain	N/A
3	Dominion - Dominion Virginia Power	Victoria Crider		Negative	Comments Submitted
3	DTE Energy - Detroit Edison Company	Marvin Johnson		Affirmative	N/A
3	Edison International - Southern California Edison Company	Romel Aquino		Negative	Comments Submitted
3	Entergy	James Keele		Affirmative	N/A
3	Evergy	Marcus Moor	Hayden Maples	Negative	Comments Submitted
3	Eversource Energy	Vicki O'Leary		Negative	Comments Submitted
3	Exelon	Kinte Whitehead		Abstain	N/A
3	FirstEnergy - FirstEnergy Corporation	Aaron Ghodooshim		Affirmative	N/A
3	Great River Energy	Michael Brytowski		Negative	Third-Party Comments
3	KAMO Electric Cooperative	Tony Gott		Affirmative	N/A
3	M and A Electric Power Cooperative	Gary Dollins		Affirmative	N/A
3	Manitoba Hydro	Mike Smith		Negative	Comments Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	MEAG Power	Roger Brand	Rebika Yitna	Abstain	N/A
3	MGE Energy - Madison Gas and Electric Co.	Benjamin Widder		Negative	Third-Party Comments
3	Muscatine Power and Water	Seth Shoemaker		Negative	Third-Party Comments
3	National Grid USA	Brian Shanahan		None	N/A
3	New York Power Authority	Richard Machado		Negative	Third-Party Comments
3	NextEra Energy - Florida Power and Light Co.	Karen Demos		Affirmative	N/A
3	NiSource - Northern Indiana Public Service Co.	Steven Taddeucci		Affirmative	N/A
3	Northeast Missouri Electric Power Cooperative	Skyler Wiegmann		Affirmative	N/A
3	Northern California Power Agency	Michael Whitney	Mason Jones	None	N/A
3	NW Electric Power Cooperative, Inc.	Heath Henry		Affirmative	N/A
3	OGE Energy - Oklahoma Gas and Electric Co.	Donald Hargrove		Negative	Third-Party Comments
3	Omaha Public Power District	David Heins		Negative	Third-Party Comments
3	Platte River Power Authority	Richard Kiess		Affirmative	N/A
3	PNM Resources - Public Service Company of New Mexico	Amy Wesselkamper		Negative	Comments Submitted
3	Portland General Electric Co.	Mayra Franco		Abstain	N/A
3	PPL - Louisville Gas and Electric Co.	James Frank		Negative	Third-Party Comments
3	Sacramento Municipal Utility District	Nicole Looney	Tim Kelley	Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	Salt River Project	Mathew Weber	Israel Perez	Affirmative	N/A
3	Santee Cooper	Vicky Budreau		Negative	Comments Submitted
3	Sempra - San Diego Gas and Electric	Bryan Bennett		Negative	Third-Party Comments
3	Sho-Me Power Electric Cooperative	Jarrod Murdaugh		Affirmative	N/A
3	Southern Company - Alabama Power Company	Joel Dembowski		Negative	Comments Submitted
3	Southern Indiana Gas and Electric Co.	Ryan Snyder		Abstain	N/A
3	Tacoma Public Utilities (Tacoma, WA)	John Nierenberg	Jennie Wike	None	N/A
3	Tennessee Valley Authority	Ian Grant		Negative	Comments Submitted
3	WEC Energy Group, Inc.	Christine Kane		Negative	Comments Submitted
3	Xcel Energy, Inc.	Nicholas Friebel		Negative	Third-Party Comments
4	Alliant Energy Corporation Services, Inc.	Larry Heckert		Negative	Third-Party Comments
4	Buckeye Power, Inc.	Jason Procuniar	Ryan Strom	Negative	Third-Party Comments
4	DTE Energy	Patricia Ireland		Affirmative	N/A
4	FirstEnergy - FirstEnergy Corporation	Mark Garza		Affirmative	N/A
4	MGE Energy - Madison Gas and Electric Co.	Ray Mangiulli		Negative	Third-Party Comments
4	Northern California Power Agency	Marty Hostler		None	N/A
4	Sacramento Municipal Utility District	Foung Mua	Tim Kelley	Affirmative	N/A
4	Seattle City Light	Robert Jones		None	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
4	Tacoma Public Utilities (Tacoma, WA)	Hien Ho	Jennie Wike	None	N/A
4	Utility Services, Inc.	Carver Powers		Affirmative	N/A
4	WEC Energy Group, Inc.	Candace Morakinyo		Negative	Comments Submitted
4	Western Power Pool	Kevin Conway		Abstain	N/A
5	AEP	Thomas Foltz		Affirmative	N/A
5	AES - AES Corporation	Ruchi Shah		Negative	Comments Submitted
5	Ameren - Ameren Missouri	Sam Dwyer		Negative	Third-Party Comments
5	American Municipal Power	Amy Ritts		None	N/A
5	APS - Arizona Public Service Co.	Andrew Smith		Affirmative	N/A
5	Associated Electric Cooperative, Inc.	Chuck Booth		Affirmative	N/A
5	Basin Electric Power Cooperative	Amanda Wangler		Negative	Third-Party Comments
5	BC Hydro and Power Authority	Quincy Wang		Negative	Comments Submitted
5	Berkshire Hathaway - NV Energy	Dwanique Spiller		Abstain	N/A
5	Black Hills Corporation	Sheila Suurmeier	Carly Miller	Negative	Comments Submitted
5	Bonneville Power Administration	Milli Chennell		Abstain	N/A
5	Buckeye Power, Inc.	Kevin Zemanek	Ryan Strom	Negative	Third-Party Comments
5	Calpine Corporation	Whitney Wallace		Affirmative	N/A
5	Cogentrix Energy Power Management, LLC	Gerry Adamski		None	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	Colorado Springs Utilities	Jeffrey Icke		Negative	Third-Party Comments
5	Con Ed - Consolidated Edison Co. of New York	Michelle Pagano		Affirmative	N/A
5	Constellation	Alison MacKellar		Negative	Comments Submitted
5	Cowlitz County PUD	Deanna Carlson		Negative	Third-Party Comments
5	Dairyland Power Cooperative	Tommy Drea		Negative	Third-Party Comments
5	DTE Energy - Detroit Edison Company	Mohamad Elhusseini		Affirmative	N/A
5	Duke Energy	Dale Goodwine		Negative	Comments Submitted
5	Edison International - Southern California Edison Company	Selene Willis		Negative	Comments Submitted
5	Enel Green Power	Natalie Johnson		Negative	Comments Submitted
5	Evergy	Jeremy Harris	Hayden Maples	Negative	Comments Submitted
5	FirstEnergy - FirstEnergy Corporation	Matthew Augustin		Affirmative	N/A
5	Greybeard Compliance Services, LLC	Mike Gabriel		Negative	Third-Party Comments
5	Hydro-Quebec (HQ)	Junji Yamaguchi	Chantal Mazza	Negative	Comments Submitted
5	Imperial Irrigation District	Tino Zaragoza	Denise Sanchez	Affirmative	N/A
5	Invenergy LLC	Rhonda Jones		Negative	Comments Submitted
5	Lincoln Electric System	Brittany Millard		Affirmative	N/A
5	Manitoba Hydro	Kristy-Lee Young		Negative	Comments Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	Muscatine Power and Water	Chance Back		Negative	Third-Party Comments
5	National Grid USA	Robin Berry		Negative	Third-Party Comments
5	Nebraska Public Power District	Ronald Bender		Negative	Third-Party Comments
5	New York Power Authority	Zahid Qayyum		Negative	Third-Party Comments
5	NextEra Energy	Richard Vendetti		Affirmative	N/A
5	NRG - NRG Energy, Inc.	Patricia Lynch		Negative	Comments Submitted
5	OGE Energy - Oklahoma Gas and Electric Co.	Patrick Wells		Negative	Third-Party Comments
5	Oglethorpe Power Corporation	Donna Johnson		Negative	Third-Party Comments
5	Oklahoma Municipal Power Authority	Patrick Tuttle		Negative	Third-Party Comments
5	Omaha Public Power District	Kayleigh Wilkerson		Negative	Third-Party Comments
5	Ontario Power Generation Inc.	Constantin Chitescu		Negative	Comments Submitted
5	OTP - Otter Tail Power Company	Stacy Wahlund		Negative	Third-Party Comments
5	Pacific Gas and Electric Company	Tyler Brun	Bob Cardle	Negative	Comments Submitted
5	Platte River Power Authority	Jon Osell		Affirmative	N/A
5	Portland General Electric Co.	Ryan Olson		Abstain	N/A
5	Public Utility District No. 1 of Snohomish County	Becky Burden		Affirmative	N/A
5	Sacramento Municipal Utility District	Ryder Couch	Tim Kelley	Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	Santee Cooper	Carey Salisbury		Negative	Comments Submitted
5	Seminole Electric Cooperative, Inc.	Melanie Wong		None	N/A
5	Sempra - San Diego Gas and Electric	Jennifer Wright		Negative	Third-Party Comments
5	Southern Company - Southern Company Generation	Leslie Burke		Negative	Comments Submitted
5	Southern Indiana Gas and Electric Co.	Larry Rogers		Abstain	N/A
5	Tacoma Public Utilities (Tacoma, WA)	Ozan Ferrin	Jennie Wike	None	N/A
5	Talen Generation, LLC	Donald Lock		None	N/A
5	TransAlta Corporation	Ashley Scheelar		None	N/A
5	Tri-State G and T Association, Inc.	Sergio Banuelos		Affirmative	N/A
5	U.S. Bureau of Reclamation	Wendy Kalidass		Negative	Comments Submitted
5	Vistra Energy	Daniel Roethemeyer	David Vickers	Negative	Comments Submitted
5	WEC Energy Group, Inc.	Michelle Hribar		Negative	Comments Submitted
5	Xcel Energy, Inc.	Gerry Huitt		Negative	Third-Party Comments
6	AEP	Mathew Miller		Affirmative	N/A
6	Ameren - Ameren Services	Robert Quinlivan		Negative	Third-Party Comments
6	APS - Arizona Public Service Co.	Marcus Bortman		Affirmative	N/A
6	Arkansas Electric Cooperative Corporation	Bruce Walkup		Abstain	N/A
6	Associated Electric Cooperative, Inc.	Brian Ackermann		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
6	Austin Energy	Imane Mrini		Affirmative	N/A
6	Basin Electric Power Cooperative	Eve G Stromer		None	N/A
6	Black Hills Corporation	Rachel Schuldt		Negative	Comments Submitted
6	Bonneville Power Administration	Tanner Brier		Abstain	N/A
6	Cleco Corporation	Robert Hirchak		Negative	Third-Party Comments
6	Con Ed - Consolidated Edison Co. of New York	Jason Chandler		Affirmative	N/A
6	Constellation	Kimberly Turco		Negative	Comments Submitted
6	Dominion - Dominion Resources, Inc.	Sean Bodkin		Negative	Comments Submitted
6	Duke Energy	John Sturgeon		Negative	Comments Submitted
6	Edison International - Southern California Edison Company	Stephanie Kenny		Negative	Comments Submitted
6	Entergy	Julie Hall		Affirmative	N/A
6	Evergy	Tiffany Lake	Hayden Maples	Negative	Comments Submitted
6	FirstEnergy - FirstEnergy Corporation	Stacey Sheehan		Affirmative	N/A
6	Imperial Irrigation District	Diana Torres	Denise Sanchez	Affirmative	N/A
6	Invenergy LLC	Colin Chilcoat		Negative	Comments Submitted
6	Lincoln Electric System	Eric Ruskamp		Affirmative	N/A
6	Manitoba Hydro	Brandin Stoesz	David Wells	Negative	Comments Submitted
6	Muscatine Power and Water	Nicholas Burns		None	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
6	New York Power Authority	Shelly Dineen		Negative	Third-Party Comments
6	NextEra Energy - Florida Power and Light Co.	Justin Welty		Affirmative	N/A
6	NiSource - Northern Indiana Public Service Co.	Rebecca Blair		Affirmative	N/A
6	NRG - NRG Energy, Inc.	Martin Sidor		Negative	Comments Submitted
6	Omaha Public Power District	Shonda McCain		Negative	Third-Party Comments
6	Platte River Power Authority	Sabrina Martz		Affirmative	N/A
6	Portland General Electric Co.	Stefanie Burke		None	N/A
6	Powerex Corporation	Raj Hundal		Negative	Third-Party Comments
6	Sacramento Municipal Utility District	Charles Norton	Tim Kelley	Affirmative	N/A
6	Salt River Project	Timothy Singh	Israel Perez	Affirmative	N/A
6	Santee Cooper	Marty Watson		Negative	Comments Submitted
6	Seminole Electric Cooperative, Inc.	Bret Galbraith		None	N/A
6	Southern Company - Southern Company Generation and Energy Marketing	Matthew O'neal		Negative	Comments Submitted
6	Southern Indiana Gas and Electric Co.	Kati Barr		Abstain	N/A
6	Tennessee Valley Authority	Jeffrey Powell		Negative	Comments Submitted
6	WEC Energy Group, Inc.	David Boeshaar		Negative	Comments Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
6	Western Area Power Administration	Jennifer Neville		Affirmative	N/A
6	Xcel Energy, Inc.	Steve Szablya		None	N/A
10	Midwest Reliability Organization	Mark Flanary		Affirmative	N/A
10	New York State Reliability Council	Wesley Yeomans		Affirmative	N/A
10	ReliabilityFirst	Tremayne Brown	Greg Sorenson	Affirmative	N/A
10	SERC Reliability Corporation	Dave Krueger		Affirmative	N/A
10	Texas Reliability Entity, Inc.	Rachel Coyne		Affirmative	N/A
10	Western Electricity Coordinating Council	Steven Rueckert		Abstain	N/A

Previous 1 Next

Showing 1 to 240 of 240 entries

BALLOT RESULTS

Ballot Name: 2024-03 Revisions to EOP-012-2 | Non-binding Poll EOP-012-3 | Non-binding Poll IN 1 NB
Voting Start Date: 10/31/2024 12:01:00 AM
Voting End Date: 11/5/2024 8:00:00 PM
Ballot Type: NB
Ballot Activity: IN
Ballot Series: 1
Total # Votes: 206
Total Ballot Pool: 225
Quorum: 91.56
Quorum Established Date: 11/5/2024 2:27:05 PM
Weighted Segment Value: 40.83

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes	Negative Fraction	Abstain	No Vote
Segment: 1	60	1	16	0.356	29	0.644	11	4
Segment: 2	3	0.2	0	0	2	0.2	1	0
Segment: 3	52	1	19	0.5	19	0.5	9	5
Segment: 4	11	0.9	4	0.4	5	0.5	0	2
Segment: 5	58	1	12	0.273	32	0.727	8	6
Segment: 6	35	1	13	0.5	13	0.5	7	2
Segment: 7	0	0	0	0	0	0	0	0
Segment: 8	0	0	0	0	0	0	0	0
Segment: 9	0	0	0	0	0	0	0	0

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes	Negative Fraction	Abstain	No Vote
Segment: 10	6	0.5	5	0.5	0	0	1	0
Totals:	225	5.6	69	2.528	100	3.072	37	19

BALLOT POOL MEMBERS

Show All entries Search: Search

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	AEP - AEP Service Corporation	Dennis Sauriol		Affirmative	N/A
1	Allete - Minnesota Power, Inc.	Hillary Creurer		Negative	No Comment Submitted
1	Ameren - Ameren Services	Tamara Evey		Abstain	N/A
1	APS - Arizona Public Service Co.	Daniela Atanasovski		Affirmative	N/A
1	Associated Electric Cooperative, Inc.	Mark Riley		Affirmative	N/A
1	Avista - Avista Corporation	Mike Magruder		Negative	No Comment Submitted
1	Balancing Authority of Northern California	Kevin Smith	Tim Kelley	Affirmative	N/A
1	Basin Electric Power Cooperative	David Rudolph		Negative	No Comment Submitted
1	BC Hydro and Power Authority	Adrian Andreoiu		Negative	No Comment Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Berkshire Hathaway Energy - MidAmerican Energy Co.	Terry Harbour		Negative	No Comment Submitted
1	Black Hills Corporation	Travis Grablander		Negative	No Comment Submitted
1	Bonneville Power Administration	Kamala Rogers-Holliday		Abstain	N/A
1	CenterPoint Energy Houston Electric, LLC	Daniela Hammons		Abstain	N/A
1	Central Iowa Power Cooperative	Kevin Lyons		Negative	No Comment Submitted
1	City Utilities of Springfield, Missouri	Michael Bowman		Negative	No Comment Submitted
1	Colorado Springs Utilities	Corey Walker		Negative	No Comment Submitted
1	Con Ed - Consolidated Edison Co. of New York	Dermot Smyth		Affirmative	N/A
1	Dominion - Dominion Virginia Power	Steven Belle		Negative	No Comment Submitted
1	Duke Energy	Katherine Street		Negative	No Comment Submitted
1	Edison International - Southern California Edison Company	Robert Blackney		Negative	No Comment Submitted
1	Entergy	Brian Lindsey		Affirmative	N/A
1	Evergy	Kevin Frick	Hayden Maples	Negative	No Comment Submitted
1	Eversource Energy	Joshua London		Negative	No Comment Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Exelon	Daniel Gacek		Abstain	N/A
1	FirstEnergy - FirstEnergy Corporation	John Martinez		Affirmative	N/A
1	Glencoe Light and Power Commission	Terry Volkmann		Negative	No Comment Submitted
1	Great River Energy	Gordon Pietsch		Negative	No Comment Submitted
1	Hydro-Quebec (HQ)	Nicolas Turcotte	Chantal Mazza	Negative	No Comment Submitted
1	IDACORP - Idaho Power Company	Sean Steffensen		Affirmative	N/A
1	Imperial Irrigation District	Jesus Sammy Alcaraz	Denise Sanchez	Affirmative	N/A
1	International Transmission Company Holdings Corporation	Michael Moltane	Allie Gavin	Abstain	N/A
1	KAMO Electric Cooperative	Micah Breedlove		Affirmative	N/A
1	Long Island Power Authority	Isidoro Behar		Abstain	N/A
1	M and A Electric Power Cooperative	William Price		Affirmative	N/A
1	MEAG Power	David Weekley	Rebika Yitna	Abstain	N/A
1	Minnkota Power Cooperative Inc.	Theresa Allard	Nikki Carson-Marquis	Negative	No Comment Submitted
1	Muscatine Power and Water	Andrew Kurriger		Negative	No Comment Submitted
1	N.W. Electric Power Cooperative, Inc.	Mark Ramsey		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	National Grid USA	Michael Jones		Negative	No Comment Submitted
1	NB Power Corporation	Jeffrey Streifling		Negative	No Comment Submitted
1	Nebraska Public Power District	Jamison Cawley		Abstain	N/A
1	NiSource - Northern Indiana Public Service Co.	Alison Nickells		Affirmative	N/A
1	Northeast Missouri Electric Power Cooperative	Brett Douglas		Affirmative	N/A
1	OGE Energy - Oklahoma Gas and Electric Co.	Terri Pyle		Negative	No Comment Submitted
1	Omaha Public Power District	Doug Peterchuck		Negative	No Comment Submitted
1	Platte River Power Authority	Marissa Archie		Affirmative	N/A
1	PNM Resources - Public Service Company of New Mexico	Lynn Goldstein		Negative	No Comment Submitted
1	Portland General Electric Co.	Brooke Jockin		None	N/A
1	PPL Electric Utilities Corporation	Michelle McCartney Longo		None	N/A
1	Salt River Project	Laura Somak	Israel Perez	Affirmative	N/A
1	Santee Cooper	Chris Wagner		Abstain	N/A
1	SaskPower	Wayne Guttormson		Abstain	N/A
1	Sempra - San Diego Gas and Electric	Mohamed Derbas		Negative	No Comment Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Southern Company - Southern Company Services, Inc.	Matt Carden		Negative	No Comment Submitted
1	Sunflower Electric Power Corporation	Paul Mehlhaff		None	N/A
1	Tacoma Public Utilities (Tacoma, WA)	John Merrell	Jennie Wike	None	N/A
1	Tennessee Valley Authority	David Plumb		Abstain	N/A
1	Tri-State G and T Association, Inc.	Donna Wood		Negative	No Comment Submitted
1	U.S. Bureau of Reclamation	Richard Jackson		Negative	No Comment Submitted
1	Unisource - Tucson Electric Power Co.	Jessica Cordero		Negative	No Comment Submitted
2	Electric Reliability Council of Texas, Inc.	Kennedy Meier		Negative	No Comment Submitted
2	PJM Interconnection, L.L.C.	Thomas Foster	Elizabeth Davis	Abstain	N/A
2	Southwest Power Pool, Inc. (RTO)	Joshua Phillips		Negative	No Comment Submitted
3	AEP	Leshel Hutchings		Affirmative	N/A
3	Ameren - Ameren Services	David Jendras Sr	Nick Leathers	Abstain	N/A
3	APS - Arizona Public Service Co.	Jessica Lopez		Affirmative	N/A
3	Arkansas Electric Cooperative Corporation	Ayslynn Mcavoy		None	N/A
3	Associated Electric Cooperative, Inc.	Todd Bennett		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	Avista - Avista Corporation	Robert Follini		Negative	No Comment Submitted
3	BC Hydro and Power Authority	Ming Jiang		Negative	No Comment Submitted
3	Berkshire Hathaway Energy - MidAmerican Energy Co.	Joseph Amato		Negative	No Comment Submitted
3	Black Hills Corporation	Josh Combs		Negative	No Comment Submitted
3	Bonneville Power Administration	Ron Sporseen		Abstain	N/A
3	Buckeye Power, Inc.	Tom Schmidt	Ryan Strom	Negative	No Comment Submitted
3	Central Electric Power Cooperative (Missouri)	Adam Weber		Affirmative	N/A
3	Con Ed - Consolidated Edison Co. of New York	Lincoln Burton		Affirmative	N/A
3	CPS Energy	Juan Gomez		Abstain	N/A
3	Dominion - Dominion Virginia Power	Victoria Crider		Negative	No Comment Submitted
3	DTE Energy - Detroit Edison Company	Marvin Johnson		Affirmative	N/A
3	Edison International - Southern California Edison Company	Romel Aquino		Negative	No Comment Submitted
3	Entergy	James Keele		Affirmative	N/A
3	Evergy	Marcus Moor	Hayden Maples	Negative	No Comment Submitted
3	Eversource Energy	Vicki O'Leary		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	Exelon	Kinte Whitehead		Abstain	N/A
3	FirstEnergy - FirstEnergy Corporation	Aaron Ghodooshim		Affirmative	N/A
3	Great River Energy	Michael Brytowski		Negative	No Comment Submitted
3	KAMO Electric Cooperative	Tony Gott		Affirmative	N/A
3	M and A Electric Power Cooperative	Gary Dollins		Affirmative	N/A
3	MEAG Power	Roger Brand	Rebika Yitna	Abstain	N/A
3	MGE Energy - Madison Gas and Electric Co.	Benjamin Widder		Negative	No Comment Submitted
3	Muscatine Power and Water	Seth Shoemaker		Negative	No Comment Submitted
3	National Grid USA	Brian Shanahan		None	N/A
3	New York Power Authority	Richard Machado		Negative	No Comment Submitted
3	NextEra Energy - Florida Power and Light Co.	Karen Demos		Affirmative	N/A
3	NiSource - Northern Indiana Public Service Co.	Steven Taddeucci		Affirmative	N/A
3	Northeast Missouri Electric Power Cooperative	Skyler Wiegmann		Affirmative	N/A
3	Northern California Power Agency	Michael Whitney	Mason Jones	None	N/A
3	NW Electric Power Cooperative, Inc.	Heath Henry		Affirmative	N/A
3	OGE Energy - Oklahoma Gas and Electric Co.	Donald Hargrove		Negative	No Comment Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	Omaha Public Power District	David Heins		Negative	No Comment Submitted
3	OTP - Otter Tail Power Company	Wendi Olson		Negative	No Comment Submitted
3	Platte River Power Authority	Richard Kiess		Affirmative	N/A
3	PNM Resources - Public Service Company of New Mexico	Amy Wesselkamper		Negative	No Comment Submitted
3	Portland General Electric Co.	Mayra Franco		Abstain	N/A
3	PPL - Louisville Gas and Electric Co.	James Frank		None	N/A
3	Sacramento Municipal Utility District	Nicole Looney	Tim Kelley	Affirmative	N/A
3	Salt River Project	Mathew Weber	Israel Perez	Affirmative	N/A
3	Santee Cooper	Vicky Budreau		Abstain	N/A
3	Sempra - San Diego Gas and Electric	Bryan Bennett		Negative	No Comment Submitted
3	Sho-Me Power Electric Cooperative	Jarrod Murdaugh		Affirmative	N/A
3	Southern Company - Alabama Power Company	Joel Dembowski		Negative	No Comment Submitted
3	Southern Indiana Gas and Electric Co.	Ryan Snyder		Abstain	N/A
3	Tacoma Public Utilities (Tacoma, WA)	John Nierenberg	Jennie Wike	None	N/A
3	Tennessee Valley Authority	Ian Grant		Abstain	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	WEC Energy Group, Inc.	Christine Kane		Negative	No Comment Submitted
4	Alliant Energy Corporation Services, Inc.	Larry Heckert		Negative	No Comment Submitted
4	Buckeye Power, Inc.	Jason Procuniar	Ryan Strom	Negative	No Comment Submitted
4	DTE Energy	Patricia Ireland		Affirmative	N/A
4	FirstEnergy - FirstEnergy Corporation	Mark Garza		Affirmative	N/A
4	MGE Energy - Madison Gas and Electric Co.	Ray Mangiulli		Negative	No Comment Submitted
4	Northern California Power Agency	Marty Hostler		None	N/A
4	Sacramento Municipal Utility District	Foung Mua	Tim Kelley	Affirmative	N/A
4	Tacoma Public Utilities (Tacoma, WA)	Hien Ho	Jennie Wike	None	N/A
4	Utility Services, Inc.	Carver Powers		Affirmative	N/A
4	WEC Energy Group, Inc.	Candace Morakinyo		Negative	No Comment Submitted
4	Western Power Pool	Kevin Conway		Negative	No Comment Submitted
5	AEP	Thomas Foltz		Affirmative	N/A
5	AES - AES Corporation	Ruchi Shah		Negative	No Comment Submitted
5	Ameren - Ameren Missouri	Sam Dwyer		Abstain	N/A
5	APS - Arizona Public Service Co.	Andrew Smith		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	Associated Electric Cooperative, Inc.	Chuck Booth		Affirmative	N/A
5	Basin Electric Power Cooperative	Amanda Wangler		Negative	No Comment Submitted
5	BC Hydro and Power Authority	Quincy Wang		Negative	No Comment Submitted
5	Berkshire Hathaway - NV Energy	Dwanique Spiller		Negative	No Comment Submitted
5	Black Hills Corporation	Sheila Suurmeier	Carly Miller	Negative	No Comment Submitted
5	Bonneville Power Administration	Milli Chennell		Abstain	N/A
5	Buckeye Power, Inc.	Kevin Zemanek	Ryan Strom	Negative	No Comment Submitted
5	Calpine Corporation	Whitney Wallace		Affirmative	N/A
5	Cogentrix Energy Power Management, LLC	Gerry Adamski		None	N/A
5	Colorado Springs Utilities	Jeffrey Icke		Negative	No Comment Submitted
5	Con Ed - Consolidated Edison Co. of New York	Michelle Pagano		Affirmative	N/A
5	Constellation	Alison MacKellar		Negative	No Comment Submitted
5	Cowlitz County PUD	Deanna Carlson		Negative	No Comment Submitted
5	Dairyland Power Cooperative	Tommy Drea		Negative	No Comment Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	DTE Energy - Detroit Edison Company	Mohamad Elhusseini		Affirmative	N/A
5	Duke Energy	Dale Goodwine		Negative	No Comment Submitted
5	Edison International - Southern California Edison Company	Selene Willis		Negative	No Comment Submitted
5	Enel Green Power	Natalie Johnson		Negative	No Comment Submitted
5	Evergy	Jeremy Harris	Hayden Maples	Negative	No Comment Submitted
5	FirstEnergy - FirstEnergy Corporation	Matthew Augustin		Affirmative	N/A
5	Greybeard Compliance Services, LLC	Mike Gabriel		Negative	No Comment Submitted
5	Hydro-Quebec (HQ)	Junji Yamaguchi	Chantal Mazza	Negative	No Comment Submitted
5	Imperial Irrigation District	Tino Zaragoza	Denise Sanchez	Affirmative	N/A
5	Invenergy LLC	Rhonda Jones		None	N/A
5	Lincoln Electric System	Brittany Millard		Abstain	N/A
5	Muscatine Power and Water	Chance Back		Negative	No Comment Submitted
5	National Grid USA	Robin Berry		Negative	No Comment Submitted
5	Nebraska Public Power District	Ronald Bender		Abstain	N/A
5	New York Power Authority	Zahid Qayyum		Negative	No Comment Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	NextEra Energy	Richard Vendetti		Affirmative	N/A
5	NRG - NRG Energy, Inc.	Patricia Lynch		Negative	No Comment Submitted
5	OGE Energy - Oklahoma Gas and Electric Co.	Patrick Wells		Negative	No Comment Submitted
5	Oglethorpe Power Corporation	Donna Johnson		Negative	No Comment Submitted
5	Oklahoma Municipal Power Authority	Patrick Tuttle		Negative	No Comment Submitted
5	Omaha Public Power District	Kayleigh Wilkerson		Negative	No Comment Submitted
5	Ontario Power Generation Inc.	Constantin Chitescu		Negative	No Comment Submitted
5	OTP - Otter Tail Power Company	Stacy Wahlund		Negative	No Comment Submitted
5	Pacific Gas and Electric Company	Tyler Brun	Bob Cardle	Negative	No Comment Submitted
5	Platte River Power Authority	Jon Osell		Affirmative	N/A
5	Portland General Electric Co.	Ryan Olson		Abstain	N/A
5	Public Utility District No. 1 of Snohomish County	Becky Burden		Affirmative	N/A
5	Sacramento Municipal Utility District	Ryder Couch	Tim Kelley	Affirmative	N/A
5	Santee Cooper	Carey Salisbury		Abstain	N/A
5	Seminole Electric Cooperative, Inc.	Melanie Wong		None	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	Sempra - San Diego Gas and Electric	Jennifer Wright		Negative	No Comment Submitted
5	Southern Company - Southern Company Generation	Leslie Burke		Negative	No Comment Submitted
5	Southern Indiana Gas and Electric Co.	Larry Rogers		Abstain	N/A
5	Tacoma Public Utilities (Tacoma, WA)	Ozan Ferrin	Jennie Wike	None	N/A
5	Tennessee Valley Authority	Darren Boehm		None	N/A
5	TransAlta Corporation	Ashley Scheelar		None	N/A
5	Tri-State G and T Association, Inc.	Sergio Banuelos		Negative	No Comment Submitted
5	U.S. Bureau of Reclamation	Wendy Kalidass		Negative	No Comment Submitted
5	WEC Energy Group, Inc.	Michelle Hribar		Negative	No Comment Submitted
5	Xcel Energy, Inc.	Gerry Huitt		Abstain	N/A
6	AEP	Mathew Miller		Affirmative	N/A
6	Ameren - Ameren Services	Robert Quinlivan		Abstain	N/A
6	APS - Arizona Public Service Co.	Marcus Bortman		Affirmative	N/A
6	Arkansas Electric Cooperative Corporation	Bruce Walkup		Abstain	N/A
6	Associated Electric Cooperative, Inc.	Brian Ackermann		Affirmative	N/A
6	Austin Energy	Imane Mrini		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
6	Black Hills Corporation	Rachel Schuldt		Negative	No Comment Submitted
6	Bonneville Power Administration	Tanner Brier		Abstain	N/A
6	Con Ed - Consolidated Edison Co. of New York	Jason Chandler		Affirmative	N/A
6	Constellation	Kimberly Turco		Negative	No Comment Submitted
6	Dominion - Dominion Resources, Inc.	Sean Bodkin		Negative	No Comment Submitted
6	Duke Energy	John Sturgeon		Negative	No Comment Submitted
6	Edison International - Southern California Edison Company	Stephanie Kenny		Negative	No Comment Submitted
6	Entergy	Julie Hall		Affirmative	N/A
6	Evergy	Tiffany Lake	Hayden Maples	Negative	No Comment Submitted
6	FirstEnergy - FirstEnergy Corporation	Stacey Sheehan		Affirmative	N/A
6	Imperial Irrigation District	Diana Torres	Denise Sanchez	Affirmative	N/A
6	Lincoln Electric System	Eric Ruskamp		Abstain	N/A
6	Muscatine Power and Water	Nicholas Burns		None	N/A
6	New York Power Authority	Shelly Dineen		Negative	No Comment Submitted
6	NextEra Energy - Florida Power and Light Co.	Justin Welty		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
6	NiSource - Northern Indiana Public Service Co.	Rebecca Blair		Affirmative	N/A
6	NRG - NRG Energy, Inc.	Martin Sidor		Negative	No Comment Submitted
6	Omaha Public Power District	Shonda McCain		Negative	No Comment Submitted
6	Platte River Power Authority	Sabrina Martz		Affirmative	N/A
6	Powerex Corporation	Raj Hundal		Negative	No Comment Submitted
6	Sacramento Municipal Utility District	Charles Norton	Tim Kelley	Affirmative	N/A
6	Salt River Project	Timothy Singh	Israel Perez	Affirmative	N/A
6	Santee Cooper	Marty Watson		Abstain	N/A
6	Seminole Electric Cooperative, Inc.	Bret Galbraith		None	N/A
6	Southern Company - Southern Company Generation and Energy Marketing	Matthew O'neal		Negative	No Comment Submitted
6	Southern Indiana Gas and Electric Co.	Kati Barr		Abstain	N/A
6	Tennessee Valley Authority	Jeffrey Powell		Negative	No Comment Submitted
6	WEC Energy Group, Inc.	David Boeshaar		Negative	No Comment Submitted
6	Western Area Power Administration	Jennifer Neville		Abstain	N/A
10	Midwest Reliability Organization	Mark Flanary		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
10	New York State Reliability Council	Wesley Yeomans		Affirmative	N/A
10	ReliabilityFirst	Tremayne Brown	Greg Sorenson	Affirmative	N/A
10	SERC Reliability Corporation	Dave Krueger		Affirmative	N/A
10	Texas Reliability Entity, Inc.	Rachel Coyne		Affirmative	N/A
10	Western Electricity Coordinating Council	Steven Rueckert		Abstain	N/A

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Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

This is the second draft of the proposed standard for a formal 18-day comment and ballot period.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	July 17, 2024
SAR posted for comment	July 18, 2024 – August 16, 2024
20-day formal comment period with initial ballot	October 17, 2024 – November 5, 2024

Anticipated Actions	Date
18-day formal comment period with additional ballot	December 3, 2024 – December 20, 2024
15-day formal comment period with additional ballot	January 29, 2025 – February 12, 2025
Board adoption	TBD

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.

Previously Approved Terms

This section includes previously approved terms from EOP-012-1 and EOP-012-2. It is included to help with drafting and the posting of EOP-012-3.

Extreme Cold Weather Temperature – The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 01/01/2000 through the date the temperature is calculated.

Generator Cold Weather Critical Component – Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

Fixed Fuel Supply Component – Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

A. Introduction

1. **Title:** Extreme Cold Weather Preparedness and Operations

2. **Number:** EOP-012-3

3. **Purpose:** To address the effects of operating in extreme cold weather by ensuring each Generator Owner has developed and implemented plan(s) to mitigate the reliability impacts of extreme cold weather on its applicable generating units.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Generator Owner

   4.1.2. Generator Operator

   4.2. Facilities:

   4.2.1. Bulk Electric System (BES) generating units. For purposes of this standard, the term "generating unit" subject to these requirements refers to the following Bulk Electric System (BES) resources:

   4.2.1.1. A Bulk Electric System generating resource identified in the BES definition, Inclusion I2 and I4; or

   4.2.1.2. A Blackstart Resource, identified in the BES definition, Inclusion I3.

5. **Effective Date:** See Implementation Plan for Project 2024-03.

B. Requirements and Measures

R1. At least once every five calendar years, each Generator Owner shall, for each of its applicable generating unit(s): [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]

1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable generating unit(s) and identify the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, if necessary; and

1.1.1. If the recalculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation, and if new corrective actions are needed, to provide the required operational capability described in Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) calendar months of the recalculation.

1.2. Identify generating unit(s) cold weather data, to include:

1.2.1. Generating unit(s) operating limitations in cold weather to include:

1.2.1.1. Capability and availability;

1.2.1.2. Fuel supply and inventory concerns;

1.2.1.3. Start-up issues;

1.2.1.4. Fuel switching capabilities; and

1.2.1.5. Environmental constraints.

1.2.2. Generating unit(s) minimum:

- Design temperature, and if available, the concurrent wind speed and precipitation;
- Historical operating temperature at least one hour in duration, and if available, the concurrent wind speed and precipitation; or
- Current cold weather performance temperature determined by an engineering analysis, which includes the concurrent wind speed and precipitation.

M1. Each Generator Owner will have evidence documenting its Extreme Cold Weather Temperature calculation, including the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, and design information, operating data, or engineering analysis that supports its generating unit minimum temperature.

R2. Applicable to generating units that begin commercial operation[1] on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[2] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

2.1 For generating units for which the Generator Owner first contractually committed to design criteria[3] relevant to this Requirement before June 29, 2023[4]:

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or
- Develop, implement, and complete by April 1, 2028, a Corrective Action Plan to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or
- Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

2.2 For generating units for which the Generator Owner first contractually committed to design criteria[5] relevant to this Requirement on or after June 29, 2023[6:]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12)

[1] Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing.
[2] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.
[3] Such commitments would be demonstrated by signed contractual commitments, or other similar documented evidence.
[4] In non-U.S. jurisdictions, use the date approved by the applicable government authority in the relevant jurisdiction.
[5] Such commitments would be demonstrated by signed contractual commitments, or other similar documented evidence.
[6] In non-U.S. jurisdictions, use the date approved by the applicable government authority in the relevant jurisdiction.

continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or

- Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R2, or it has developed, implemented, and completed by April 1, 2028, a Corrective Action Plan, or it has declared a Generator Cold Weather Constraint for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature under Requirement R1 Part 1.2.2 which is equal to or less than the generating unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, Corrective Action Plan(s) (if applicable), and Generator Cold Weather Constraints (if applicable).

R3. Applicable to generating unit(s) in commercial operation prior to October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[7] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature; or
- Develop a Corrective Action Plan to add new or modify existing freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature.

M3. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R3, or it has developed a Corrective Action Plan for the identified issues. Acceptable evidence may include, but is not limited to, the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature per Part 1.2.2 which is equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and Corrective Action Plan(s).

R4. Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness plan(s)

[7] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

shall include the following, at a minimum: *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. The lowest calculated Extreme Cold Weather Temperature for each generating unit, as determined in Requirement R1;[8]

4.2. The generating unit cold weather data, as determined in Requirement R1, Part 1.2;

4.3. Documentation identifying Generator Cold Weather Critical Components;

4.4. Documentation of freeze protection measures implemented on Generator Cold Weather Critical Components that includes measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain); and

4.5. Annual inspection and maintenance of generating unit(s) freeze protection measures implemented on Generator Cold Weather Critical Components.

M4. Each Generator Owner will have evidence documenting that its cold weather preparedness plan(s) was implemented and maintained in accordance with Requirement R4. Examples of documentation to demonstrate a cold weather preparedness plan may include existing operating procedures, plans, checklists, or processes. Examples of documentation, to demonstrate inspections and maintenance have been completed, may include, but are not limited to, completed work order(s) from the Generator Owner's work management system and/or freeze protection checklists identifying the measures inspected and maintained for the Generator Cold Weather Critical Components.

R5. Each Generator Owner, in conjunction with its Generator Operator, shall identify the entity responsible for providing generating unit-specific training, and that identified entity shall provide annual training to the maintenance and operations personnel, as applicable, responsible for implementing the cold weather preparedness plan(s) developed pursuant to Requirement R4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*

M5. Each Generator Operator or Generator Owner will have documented evidence that the applicable personnel completed annual training of the Generator Owner's cold weather preparedness plan(s). This evidence may include, but is not limited to, documents such as personnel training records, training materials, date of training, agendas or learning objectives, attendance at pre-work briefings, review of work order tasks, tailboards, attendance logs for classroom training, and completion records for computer-based training in fulfillment of Requirement R5.

[8] Generator Owners shall include the lowest calculated Extreme Cold Weather Temperature for the unit, even where subsequent periodic re-calculations under Requirement R1 Part 1.1 cause an increase in the Extreme Cold Weather Temperature.

R6. Each Generator Owner shall, when experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[9] develop and implement[10] a Corrective Action Plan(s) to address identified issues as follows: *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

6.1. The Generator Owner shall develop a Corrective Action Plan for the generating unit experiencing a Generator Cold Weather Reliability Event.

6.2. The Generator Owner shall conduct a review of the applicability of the corrective actions from the Corrective Action Plan developed under Part 6.1 to freeze protection measures on similar equipment at other generating unit(s) owned by the Generator Owner and, if corrective actions are applicable, develop or update a Corrective Action Plan no later than 12 calendar months following the Generator Cold Weather Reliability Event to address the other unit(s).

6.3. For each Corrective Action Plan, the Generator Owner shall include at a minimum:

6.3.1. A summary of the identified cause(s) of the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;

6.3.2. A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures;

6.3.3. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed;

6.3.4. A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required; and

6.3.5. A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows:

[9] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[10] If a Generator Owner has previously experienced a Generator Cold Weather Reliability Event and developed a Corrective Action Plan for the generating unit under Requirement R6 Parts 6.1 or 6.2, the Generator Owner may review and update its existing plan(s) in lieu of developing a new plan.

6.3.5.1. For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.[11]

6.3.5.2. For other generating unit(s) owned by the Generator Owner, within 24 calendar months of the Generator Cold Weather Reliability Event.

6.4 If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval. The submitted Corrective Action Plan extension request shall include the following:

6.4.1. An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner;

6.4.2. Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and

6.4.3. Updated timetable for implementing the selected actions in Part 6.3.2.

6.5 The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, as applicable.

M6. Each Generator Owner will have dated evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event for applicable unit(s) in accordance with Requirement R6. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraint(s).

R7. Each Generator Owner that is required to develop a Corrective Action Plan under Requirements R1 or R3 shall develop and implement the Corrective Action Plan in accordance with the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

7.1. For each Corrective Action Plan, the Generator Owner shall include at a minimum the following:

7.1.1. A list of any actions that require new freeze protection measures, with a timetable specifying completion of such measures within 48 calendar months of completing development of the Corrective Action Plan;

[11] For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year.

7.1.2. A list of any actions that remedy issues with existing freeze protection measures with a timetable specifying completion of such measures within 24 calendar months of completing development of the Corrective Action Plan (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures);

7.1.3. A description of updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; and

7.1.4. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed.

7.2. If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R7 Part 7.1 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following:

7.2.1. An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.2.2. Revisions to the selected actions in Parts 7.1, if any, including utilization of operating procedures, if applicable; and

7.2.3. Updated timetable for implementing the selected actions in Part 7.1.

7.3. The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8.

M7. Each Generator Owner shall have dated evidence that it developed and implemented a Corrective Action Plan for applicable unit(s) in accordance with Requirement R7. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraints.

R8. Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

8.1. Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows:

- For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or
- For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable.

8.2. Update the operating limitations under Requirement R1 Part R1.2 if applicable; and

8.3. If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2.

M8. Each Generator Owner shall have dated evidence that demonstrates it performed the actions in accordance with Requirement R8. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): a copy of the Generator Cold Weather Constraint declaration, evidence the declaration was provided to the Compliance Enforcement Authority in accordance with the specified timeframe, records that document update(s) to the operating limitations, as needed, and updated Corrective Action Plan(s), if applicable.

R9. The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

M9. Each Generator Owner shall have dated evidence that demonstrates it reviewed Generator Cold Weather Constraints in accordance with Requirement R9. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the performance of the review within the required timeframe.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" (CEA) means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation.

- The Generator Owner shall retain data or evidence to support its current Extreme Cold Weather Temperature calculation and generating unit cold weather data, plus each calculation or revision since the last audit, for Requirement R1 and Measure M1.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R2 or R3 is complete, whichever timeframe is greater, for Requirements R2 and R3 and Measures M2 and M3. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall retain the current cold weather preparedness plan(s), as evidence of review or revision history, plus each version issued since the last audit and evidence of compliance since the last audit for Requirement R4 and Measure M4.
- The Generator Owner or Generator Operator shall keep data or evidence to show compliance for three years for Requirement R5 and Measure M5.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extensions (if applicable), under Requirement R6 is complete, whichever timeframe is greater, for Requirement R6 and Measure M6. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extension (if applicable), under Requirement R7 is complete, whichever time-frame is

greater, for Requirement R7 and Measure M7. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.

- The Generator Owner shall maintain data or evidence to support its current Generator Cold Weather Constraint declaration(s), plus each revision since the last audit, for Requirement R8 and Measure M8.
- The Generator Owner shall maintain data or evidence to support that it reviewed each Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority at least once every 36 calendar months since the last audit, for Requirement R9 and Measure M9.

1.3. "Compliance Monitoring Enforcement Program" or "CMEP" means, depending on the context (1) the NERC Compliance Monitoring and Enforcement Program (Appendix 4C to the NERC Rules of Procedure) or the Commission-approved program of a Regional Entity, as applicable, or (2) the program, department or organization within NERC or a Regional Entity that is responsible for performing compliance monitoring and enforcement activities with respect to Registered Entities' compliance with Reliability Standards.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.
R2.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.
R3.	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	measure(s) meeting the criteria in Requirement R3 for 5% or less of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for 5% or less of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 20% of its applicable units.
R4.	The Generator Owner created a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable Parts within Requirement R4.	The Generator Owner had and maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.
R5.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	described in Requirement R5 to the greater of: • one applicable personnel for a single generating unit; or • 5% or less of its total applicable personnel.	described in Requirement R5 to the greater of: • two applicable personnel for a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	described in Requirement R5 to the greater of: • three applicable personnel for a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	described in Requirement R5 to the greater of: • four or more applicable personnel for a single generating unit; or • more than 15% of its total applicable personnel.
R6.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 12 but fewer than 15 calendar months after the Generator Cold Weather Reliability Event.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 15 but fewer than 18 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirement R6, but it failed to contain one	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 18 but fewer than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirements R6, but it failed to contain two	The Generator Owner failed to develop a Corrective Action Plan where required under Requirement R6. OR The Generator Owner developed a Corrective Action Plan where required under Requirement R6, but failed to implement it. OR The Generator Owner failed to conduct a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, or the Generator

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		of the elements in Requirement R6, Part 6.3.	of the elements in Requirement R6, Part 6.3. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable), but it did not include one of the required elements.	Owner conducted the review, but it was conducted more than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan, but failed to contain three or more of the elements in Requirement R6, Part 6.3. OR The Generator Owner did not submit a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable). OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.4 (if applicable), but it did not include two or more of the elements in Requirement R6, Part 6.4.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s), in accordance with Requirement R6, Part 6.5.
R7.	N/A	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include a description of updates to the cold weather preparedness plan and identification of operating limits as required in Requirement R7, Parts 7.1.3 and 7.1.4.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include one of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include one of the required elements.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include two or more of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include two or more of the required elements. OR

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				The Generator Owner failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable). OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) in accordance with Requirement R7 Part 7.3.
R8.	The Generator Owner declared a Generator Cold Weather Constraint and submitted it to the Compliance Enforcement Authority but it did not do so within the timeframe provided in Requirement R8 Part 8.1.	The Generator Owner declared a Generator Cold Weather Constraint, but failed to update its operating limitations as required under Requirement R8, Part 8.2 (if applicable).	The Generator Owner declared a Cold Weather Constraint, but failed to update its Corrective Action Plan following a determination by the Compliance Enforcement Authority that the constraint is invalid in accordance with Requirement R8 Part 8.3 (as applicable).	The Generator Owner declared a Generator Cold Weather Constraint but failed to submit it to the Compliance Enforcement Authority. OR The Generator Owner failed to implement freeze protection measures to provide the necessary capability in

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				accordance with Requirement R8 Part 8.3.
R9.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 36 but fewer than 38 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 38 but fewer than 40 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 40 but fewer than 42 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was performed more than 42 calendar months after CEA validation or after the previous Generator Owner review. OR The Generator Owner failed to review a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9.

D. Regional Variances

None.

E. Associated Documents

Implementation Plan

Calculating Extreme Cold Weather Temperature

EOP-012-3 Technical Rationale

Generator Cold Weather CAP Extension and Constraint Process

Attachment 1

Generator Owners shall determine the applicability of a Generator Cold Weather Constraint declared under Requirements R2, R6, and R7 using the criteria as described below.

The definition of a Generator Cold Weather Constraint is: "Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies".

A Generator Cold Weather Constraint can be identified using the following criteria:

Known Generator Cold Weather Constraints

The following are circumstances which, if present and confirmed as valid by the CEA, will constitute Generator Cold Weather Constraints:

- Individual wind turbine towers manufactured prior to October 1, 2027 that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1 for generating units that began commercial operation prior to October 1, 2027.
- Implementation of heat tracing or other de-icing technologies for wind turbine blades, that, through analysis, have been shown to not be effective or not made available by the OEM for generating units of a comparable types in regions that experience similar winter climate conditions.
- Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities.
- Removal of accumulated frozen precipitation on solar panels.
- Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters.

Case-by-case Determinations of Generator Cold Weather Constraints

The following situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the CEA will these circumstances constitute a valid Generator Cold Weather Constraint:

1. The implementation of a specific freeze protection measure will void an equipment warranty.
2. The implementation of a specific freeze protection measure applied to address conditions beyond the manufacturer's design limitations.
3. The implementation of a specific freeze protection measure is precluded by technical or physical limitations. For example:

   a. Installing wind breaks around a cooling tower or air-cooled heat exchanger that requires free airflow for its functionality;
   b. Implementing freeze protection measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system;
   c. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.
4. A determination, through an analysis, that the freeze protection measure has been shown to be ineffective or that there is no record that such a measure has been effectively utilized on generating unit(s) of comparable types in regions that experience similar winter climate conditions.
5. A determination, through an analysis, that the implementation of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:
   a. The implementation of freeze protection measures, while feasible, would result in the accelerated premature retirement of an existing generating unit with no acceptable replacement available within the accelerated timeframe;
   b. The implementation of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit;
   c. The implementation of freeze protection measures would reduce the generating unit's ability to provide Real Power or Reactive Power by more than three percent, or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.), when freeze protection measures are not in use; or
   d. The implementation of freeze protection measures would reduce the summer net dependable capacity[1], or net dependable capacity at Peak Demand, of the generating unit by more than three percent or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.);
   e. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.
6. The implementation of new freeze protection measures to an existing generating unit that has previously communicated a retirement date to the appropriate functional entity (e.g., Transmission Planner (TP), Reliability Coordinator (RC), Balancing Authority (BA), etc.) that falls within three calendar years of the Generator Cold Weather Constraint declaration;

[1] "net dependable capacity" refers to the definition used for reporting to the NERC in Generating Availability Data System (GADS) appropriate for the generation type.

7. The implementation of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.
8. A determination through an analysis that the freeze protection measure is not available on the commercial market for generating units of comparable types in regions that experience similar winter climate conditions.
9. Implementation of freeze protection measures would not increase reliability of a generating unit due to technical or physical constraints on fuel supply which are not due to Fixed Fuel Supply Components, and which are outside the Generator Owner's control.
10. Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Generator Cold Weather Critical Components.

When submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply. An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

Version History

Version	Date	Action	Change Tracking
1	October 1, 2022	Drafted by Project 2021-07	New
2	February 16, 2023	Revisions drafted by Project 2021-07 due to FERC Order and inquiry Recommendations.	Revisions
2	February 15,2024	Board Adopted	
2	June 27, 2024	FERC Approved	
3	October 17, 2024	Drafted by Project 2024-03	As directed by the June 2024 FERC Order

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

This is the second draft of the proposed standard for a formal 18-day comment and ballot period.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	July 17, 2024
SAR posted for comment	July 18, 2024 – August 16, 2024
20-day formal comment period with initial ballot	October 17, 2024 – November 5, 2024

Anticipated Actions	Date
18-day formal comment period with additional ballot	December 3, 2024 – December 20, 2024
15-day formal comment period with additional ballot	January 29, 2025 – February 12, 2025
Board adoption	TBD

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.

Previously Approved Terms

This section includes previously approved terms from EOP-012-1 and EOP-012-2. It is included to help with drafting and the posting of EOP-012-3.

Extreme Cold Weather Temperature – The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from ~~1/1/2000~~01/01/2000 through the date the temperature is calculated.

Generator Cold Weather Critical Component – Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

Fixed Fuel Supply Component – Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

A. Introduction

1. **Title:** Extreme Cold Weather Preparedness and Operations

2. **Number:** EOP-012-3

3. **Purpose:** To address the effects of operating in extreme cold weather by ensuring each Generator Owner has developed and implemented plan(s) to mitigate the reliability impacts of extreme cold weather on its applicable generating units.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Generator Owner

   4.1.2. Generator Operator

   4.2. Facilities:

   4.2.1. Bulk Electric System (BES) generating units. For purposes of this standard, the term "generating unit" subject to these requirements refers to the following Bulk Electric System (BES) resources:

   4.2.1.1. A Bulk Electric System generating resource identified in the BES definition, ~~inclusion~~Inclusion I2 and I4; or

   4.2.1.2. A Blackstart Resource, identified in the BES definition, ~~inclusion~~Inclusion I3.

5. **Effective Date:** See Implementation Plan for Project 2024-03.

B. Requirements and Measures

R1. At least once every five calendar years, each Generator Owner shall, for each of its applicable generating unit(s): [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]

1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable generating unit(s) and identify the calculation date ~~and~~, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, if necessary; and

1.1.1. If the ~~re-calculated~~recalculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation~~. If~~, and if new corrective actions are needed, to provide the required operational capability ~~under~~described in Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) calendar months of the recalculation.

1.2. Identify generating unit(s) cold weather data, to include:

1.2.1. Generating unit(s) operating limitations in cold weather to include:

1.2.1.1. Capability and availability;

1.2.1.2. Fuel supply and inventory concerns;

1.2.1.3. Start-up issues;

1.2.1.4. Fuel switching capabilities; and

1.2.1.5. Environmental constraints.

1.2.2. Generating unit(s) minimum:

- Design temperature, and if available, the concurrent wind speed and precipitation;
- Historical operating temperature at least one hour in duration, and if available, the concurrent wind speed and precipitation; or
- Current cold weather performance temperature determined by an engineering analysis, which includes the concurrent wind speed and precipitation.

M1. Each Generator Owner will have evidence documenting its Extreme Cold Weather Temperature calculation, including the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, and design information, operating data, or engineering analysis that supports its generating unit minimum temperature.

R2. Applicable to generating units ~~which~~that begin commercial operation[1] on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[2] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

2.1 For generating units for which the Generator Owner first contractually committed to design criteria[3] relevant to this Requirement before ~~February 16~~June 29, 2023[4]:

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or

- ~~Have~~Develop, implement, and complete by April 1, 2028, a Corrective Action Plan~~(s) in place (to include any applicable Generator Cold Weather Constraint(s) upon beginning commercial operation,~~ to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours~~.~~; or

- Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

[1] Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing.

[2] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[3] Such commitments would be demonstrated by signed contractual commitments, ~~emailed correspondence agreeing to thermal design criteria,~~ or other similar documented evidence.

[4] ~~Or~~In non-U.S. jurisdictions, use the date ~~the definition of Extreme Cold Weather Temperature was~~ approved by the applicable government authority in the relevant jurisdiction.

2.2 For generating units for which the Generator Owner first contractually committed to design criteria[5] relevant to this Requirement on or after ~~February 16~~June 29, 2023[6]:

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or
- Document in a declaration, with justification, ~~as~~if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R2, or it has developed, implemented, and completed by April 1, 2028, a Corrective Action Plan, or it has declared a Generator Cold Weather Constraint for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature under Requirement R1 Part 1.2.2 which is equal to or less than the generating unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, Corrective Action Plan(s) (if applicable), and Generator Cold Weather Constraints (if applicable).

R3. Applicable to generating unit(s) in commercial operation prior to October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[7] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature; or
- Develop a Corrective Action Plan to add new or modify existing freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature.

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[5] Such commitments would be demonstrated by signed contractual commitments, ~~emailed correspondence agreeing to thermal design criteria,~~ or other similar documented evidence.

[6] ~~Or~~In non-U.S. jurisdictions, use the date ~~the definition of Extreme Cold Weather Temperature was~~ approved by the applicable government authority in the relevant jurisdiction.

[7] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

M3. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R3, or it has developed a Corrective Action Plan for the identified issues. Acceptable evidence may include, but is not limited to, the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature per Part 1.2.2 which is equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and Corrective Action Plan(s).

R4. Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness plan(s) shall include the following, at a minimum: *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. The lowest calculated Extreme Cold Weather Temperature for each generating unit, as determined in Requirement R1;[8]

4.2. The generating unit cold weather data, as determined in Requirement ~~R1.2~~R1, Part 1.2;

4.3. Documentation identifying Generator Cold Weather Critical Components;

4.4. Documentation of freeze protection measures implemented on Generator Cold Weather Critical Components ~~which~~that includes measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain); and

4.5. Annual inspection and maintenance of generating unit(s) freeze protection measures implemented on Generator Cold Weather Critical Components.

M4. Each Generator Owner will have evidence documenting that its cold weather preparedness plan(s) was implemented and maintained in accordance with Requirement R4. Examples of documentation to demonstrate a cold weather preparedness plan may include existing operating procedures, plans, checklists, or processes. Examples of documentation, to demonstrate inspections and maintenance have been completed, may include, but are not limited to, completed work order(s) from the Generator Owner's work management system and/or freeze protection checklists identifying the measures inspected and maintained for the Generator Cold Weather Critical Components.

R5. Each Generator Owner, in conjunction with its Generator Operator, shall identify the entity responsible for providing ~~the~~ generating unit-specific training, and that identified entity shall provide annual training to ~~its~~the maintenance ~~or~~and operations personnel, as applicable, responsible for implementing the cold weather

[8] Generator Owners shall include the lowest calculated Extreme Cold Weather Temperature for the unit, even where subsequent periodic re-calculations under Requirement R1 Part 1.1 cause an increase in the Extreme Cold Weather Temperature.

preparedness plan(s) developed pursuant to Requirement R4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*

M5. Each Generator Operator or Generator Owner will have documented evidence that the applicable personnel completed annual training of the Generator Owner's cold weather preparedness plan(s). This evidence may include, but is not limited to, documents such as personnel training records, training materials, date of training, agendas or learning objectives, attendance at pre-work briefings, review of work order tasks, tailboards, attendance logs for classroom training, and completion records for computer-based training in fulfillment of Requirement R5.

R6. Each Generator Owner shall, ~~for each~~when experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[9] develop and implement[10] a Corrective Action Plan ~~when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed before the first day of July, but not more than 150 days after the Generator Cold Weather Reliability Event. The Generator Owner shall~~(s) to address identified issues as follows: *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

6.1. The Generator Owner shall develop a Corrective Action Plan for the generating unit experiencing a Generator Cold Weather Reliability Event.

6.2. The Generator Owner shall conduct a review of the applicability of the corrective actions from the Corrective Action Plan developed under Part 6.1 to freeze protection measures on similar equipment at other generating unit(s) owned by the Generator Owner and, if corrective actions are applicable, develop or update a Corrective Action Plan no later than 12 calendar months following the Generator Cold Weather Reliability Event to address the other unit(s).

~~**6.1.** Ensure the~~**6.3.** For each Corrective Action Plan ~~contains~~, the Generator Owner shall include at a minimum:

~~**6.1.1**~~**6.3.1.** A summary of the identified cause(s) ~~for~~of the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;

[9] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[10] If a Generator Owner has previously experienced a Generator Cold Weather Reliability Event and developed a Corrective Action Plan for the generating unit under Requirement R6 Parts 6.1 or 6.2, the Generator Owner may review and update its existing plan(s) in lieu of developing a new plan.

~~6.1.2~~6.3.2. A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures;

~~6.1.3~~6.3.3. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until ~~execution~~implementation of the corrective action(s) identified in the Corrective Action Plan is completed;

~~6.1.4~~6.3.4. A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required; and

~~6.1.5~~6.3.5. A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows:

6.3.5.1. For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event[10]~~; and~~.[11]

~~**6.1.6.** A review of applicability to similar equipment freeze protection measures at~~**6.3.5.2.** For other generating ~~units~~unit(s) owned by the Generator Owner, ~~with a specified timetable for corrective actions to be completed~~ within 24 calendar months of the Generator Cold Weather Reliability Event~~;~~.

~~**6.2.** Update the~~**6.4** If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan ~~action(s) and timetable(s), with justification, and~~in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA)[11] for approval ~~where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 6.1~~. The submitted Corrective Action Plan extension request shall include the following~~;~~ :

~~**6.2.1.** Circumstances~~**6.4.1.** An explanation of the circumstances causing the delay and ~~how~~why those circumstances are beyond the control of the Generator Owner;

~~[10] For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year.~~

[11] For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year.

~~[11] Extension requests will be received and evaluated in accordance with the NERC process. The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.~~

~~6.2.2~~6.4.2. Revisions to the selected actions in Part ~~6.1~~6.3.2, if any, including utilization of ~~Operating Procedures~~operating procedures, if applicable; and

~~6.2.3~~6.4.3. Updated timetable for implementing the selected actions in Part ~~6.1~~6.3.2.

~~**6.3.** Document~~**6.5** The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, ~~if~~as applicable~~, that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan~~.

M6. Each Generator Owner will have ~~documented~~dated evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event ~~at an~~for applicable unit(s) in accordance with Requirement R6. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), ~~Generator Cold Weather Constraint(s),~~ completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, ~~and~~ updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraint(s).

R7. Each Generator Owner~~, for each~~ that is required to develop a Corrective Action Plan ~~developed pursuant to~~under Requirements R1~~, R2,~~ or R3 shall~~, as applicable~~ develop and implement the Corrective Action Plan in accordance with the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

7.1. ~~Include a timetable for implementing the selected corrective action(s) that shall~~For each Corrective Action Plan, the Generator Owner shall include at a minimum the following:

7.1.1. A list of any actions that require new freeze protection measures, with a timetable specifying completion of such measures within 48 calendar months of completing development of the Corrective Action Plan;

~~**7.1.1.** List the action(s) which~~**7.1.2.** A list of any actions that remedy~~(ies)~~ issues with existing freeze protection measures~~, if any, to be completed~~ with a timetable specifying completion of such measures within 24 calendar months of completing development of the Corrective Action Plan~~,~~ (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures);

~~**7.1.2.** List the action(s) which require(s) new freeze protection measures, if any, to be completed within 48 calendar months of completing development of the Corrective Action Plan; and~~

7.1.3. ~~Describe the~~A description of updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions

to the Generator Cold Weather Critical Components and their freeze protection measures~~.~~; and

7.1.4. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed.

7.2. ~~Complete all~~If a Generator Owner determines it will be unable to complete one or more of the actions ~~described in the~~in a Corrective Action Plan in accordance with the ~~specified~~ timetables ~~in~~specified in Requirement R7 Part 7.1~~;~~

due to circumstances beyond its control, the Generator Owner shall submit ~~**7.3.** Submit~~ a Corrective Action Plan extension request~~, for the approval of the CEA[12], where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 7.1~~ to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following:

~~**7.**3.1 Explain the~~**7.2.1.** An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

~~**7.**3.2 Include, as applicable, revisions~~**7.2.2.** Revisions to the selected actions in ~~Part~~Parts 7.1, if any, including utilization of ~~Operating Procedures~~operating procedures, if applicable; and

~~**7.**3.3 Include an updated~~**7.2.3.** Updated timetable for implementing the selected actions in Part 7.1.

~~**7.4.** Document in a declaration, with justification, any Generator Cold Weather Constraint in accordance with Requirement R8 that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.~~

7.3. The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8.

M7. Each Generator Owner shall have dated evidence that ~~demonstrates it~~it developed and implemented ~~each~~a Corrective Action Plan~~, including updating actions or timetables, or has explained in a declaration why corrective actions are not being implemented~~ for applicable unit(s) in accordance with Requirement R7. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): ~~records that document the implementation of each~~ Corrective Action Plan~~ and the completion of actions for each Corrective Action Plan~~

~~[12] Extension requests will be received and evaluated in accordance with the NERC process. The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.~~

~~including revision history of each Corrective Action Plan, documentation from the Compliance Enforcement Authority indicating that a Corrective Action Plan extension request was granted and, if applicable, justification to support any changes to corrective action(s) identified in the Corrective Action Plan or~~(s), completed work orders, copies of any Corrective Action Plan extension requests ~~when timetables exceeding the timelines in Requirement R7 Part 7.1. For each Corrective Action Plan applying to multiple generating units, the timetable shall reflect implementation at each unit addressed in~~and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan~~. Evidence may also include work management program records, work orders, and maintenance records. Any declaration shall contain dated documentation to support constraints identified by the Generator Owner.~~, and, where applicable, declared Generator Cold Weather Constraints.

R8. Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

8.1. Submit its Generator Cold Weather Constraint declaration(s) to the CEA ~~within 45 days of determining that the Generator Cold Weather Constraint is applicable.~~ as follows:

- For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit ~~the Generator Cold Weather Constraint declaration(s) no later than~~within 15 calendar days after commercial operation; or
- ~~**8.2.** Review any~~For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint ~~declaration validated by the CEA every 24 calendar months to determine if it remains valid under Attachment 1;~~is applicable.

~~**8.3**~~**8.2.** Update the operating limitations ~~associated with capability and availability~~ under Requirement R1 Part R1.2 if applicable; and

~~**8.4**~~**8.3.** If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with ~~the timetables in~~ Requirement R6 ~~Part 6.1~~ or Requirement R7~~ Part 7.1, to begin from the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid.~~, as applicable, subject to any extensions approved by the CEA or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2.

M8. Each Generator Owner shall have dated evidence that demonstrates it performed the actions in accordance with Requirement R8. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): a copy of the Generator Cold Weather Constraint declaration, evidence the declaration was provided to the Compliance Enforcement Authority in accordance with the

specified timeframe, records that document update(s) to the operating limitations, as needed, and updated Corrective Action Plan(s), if applicable.

R9. The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

~~M8~~M9. Each Generator Owner shall have dated evidence that demonstrates it ~~performed the actions~~reviewed Generator Cold Weather Constraints in accordance with Requirement ~~R8~~R9. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the performance of the review ~~and update to the operating limitations, as needed~~within the required timeframe.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" (CEA) means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation.

- The Generator Owner shall retain data or evidence to support its current Extreme Cold Weather Temperature calculation and generating unit cold weather data, plus each calculation or revision since the last audit, for Requirement R1 and Measure M1.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R2 or R3 is complete, whichever timeframe is greater, for Requirements R2 and R3 and Measures M2 and M3. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall retain the current cold weather preparedness plan(s), as evidence of review or revision history, plus each version issued since the last audit and evidence of compliance since the last audit for Requirement R4 and Measure M4.
- The Generator Owner or Generator Operator shall keep data or evidence to show compliance for three years for Requirement R5 and Measure M5.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extensions (if applicable), under Requirement R6 is complete, whichever timeframe is greater, for Requirement R6 and Measure M6. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extension (if applicable), under Requirement R7 is complete, whichever ~~time frame~~time-

frame is greater, for Requirement R7 and Measure M7. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.

- The Generator Owner shall maintain data or evidence to support its current Generator Cold Weather Constraint declaration(s), plus each revision since the last audit, for Requirement R8 and Measure M8.

~~**Compliance Monitoring and Enforcement Program:** As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.~~

- The Generator Owner shall maintain data or evidence to support that it reviewed each Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority at least once every 36 calendar months since the last audit, for Requirement R9 and Measure M9.

1.3. "Compliance Monitoring Enforcement Program" or "CMEP" means, depending on the context (1) the NERC Compliance Monitoring and Enforcement Program (Appendix 4C to the NERC Rules of Procedure) or the Commission-approved program of a Regional Entity, as applicable, or (2) the program, department or organization within NERC or a Regional Entity that is responsible for performing compliance monitoring and enforcement activities with respect to Registered Entities' compliance with Reliability Standards.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.
R2.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not ~~have~~complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not ~~have~~complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not ~~have~~complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not ~~have~~complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R3.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for 5% or less of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 20% of its applicable units.
R4.	The Generator Owner ~~created~~ implemented a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable Parts within Requirement R4.	The Generator Owner ~~had and~~ maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.
R5.	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • one applicable personnel ~~at~~for a single generating unit; or • 5% or less of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • two applicable personnel ~~at~~for a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • three applicable personnel ~~at~~for a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • four or more applicable personnel ~~at~~for a single generating unit; or • more than 15% of its total applicable personnel.
R6.	The Generator Owner ~~developed and implemented a Corrective Action Plan for a~~conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 12 but fewer than 15 calendar months after the Generator Cold Weather Reliability Event~~, but it was not developed in accordance with the timeline specified in Requirement R6~~.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 15 but fewer than 18 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan ~~for a Generator Cold Weather~~	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 18 but fewer than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan ~~for a Generator Cold Weather~~	The Generator Owner failed to develop a Corrective Action Plan where required under Requirement R6. OR The Generator Owner developed a Corrective Action Plan ~~for a Generator Cold Weather Reliability Event~~where required under Requirement R6, but failed to implement it. OR The Generator Owner failed to conduct a review of applicability to freeze protection measures at other

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		~~Reliability Event~~where required under Requirement R6, but it failed to contain one of the elements in Requirement R6, Part ~~6.1~~6.3.	~~Reliability Event~~where required under Requirements R6, but it failed to contain two of the elements in Requirement R6, Part ~~6.1~~6.3. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part ~~6.2~~6.4 (if applicable), but it did not include one of the required elements ~~in Requirement R6, Part 6.2~~.	unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, or the Generator Owner conducted the review, but it was conducted more than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan, but failed to contain three or more of the elements in Requirement R6, Part ~~6.1~~ 6.3. OR The Generator Owner did not submit a Corrective Action Plan extension request in accordance with Requirement R6, Part ~~6.2~~6.4 (if applicable). OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part ~~6.2~~6.4 (if applicable), but it did not

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				include two or more of the elements in Requirement R6, Part ~~6.2~~6.4. OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s), ~~as required by~~in accordance with Requirement R6, Part ~~6.3~~6.5.
R7.	~~The Generator Owner completed selected corrective action(s) in accordance with the 24 and 48 calendar month timelines provided in Requirement R7, Part 7.1 (Part 7.2), but failed to include in its Corrective Action Plan a timetable listing such action(s) in accordance with Requirement R7, Parts 7.1.1-7.1.2.~~N/A	The Generator Owner ~~included a timetable for implementing the selected corrective action(s) in its~~developed and implemented a Corrective Action Plan in accordance with Requirement R7, ~~Part 7.1 and completed actions in accordance with that timetable (Part 7.2),~~ but it failed to ~~list the~~include a description of updates to the cold weather preparedness plan and identification of	The Generator Owner ~~included in its~~developed and implemented a Corrective Action Plan ~~a timetable for implementing the selected corrective actions, completed actions~~ in accordance with ~~that timetable (Part 7.2),~~Requirement R7, but it failed to include one of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include two or more of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner ~~included in its Corrective Action Plan a timetable for implementing the selected corrective~~

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		operating limits as required in Requirement R7, ~~Part~~Parts 7.1.3 and 7.1.4.	OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part ~~7.3 when the timetables for completion were projected to exceed the timelines in Part 7.1~~7.2 (if applicable), but ~~its request~~it did not include one of the required elements ~~in Requirement R7, Part 7.3.~~.	~~actions, completed actions in accordance with that timetable (Part 7.2), and~~ submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part ~~7.3 when the timetables for completion were projected to exceed the timelines in Part 7.1~~7.2 (if applicable), but ~~its request~~it did not include two or more of the required elements ~~in Requirement R7, Part 7.3~~. OR The Generator Owner ~~included in its Corrective Action Plan a timetable for implementing the selected corrective actions, and completed actions in accordance with that timetable (Part 7.2), but~~ failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable).

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				OR The Generator Owner failed to ~~complete~~implement corrective action(s) ~~described in the~~identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) ~~that preclude the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan~~in accordance with Requirement R7 Part 7.3.
R8.	The Generator Owner ~~submitted~~declared a Generator Cold Weather Constraint ~~in accordance with Requirement R8, Part 8.1,~~and submitted it to the Compliance Enforcement Authority but it did not do so within the ~~specified~~ timeframe provided in Requirement R8 Part 8.1.	The Generator Owner declared a Generator Cold Weather Constraint, but failed to ~~comply with one of the elements in~~update its operating limitations as required under Requirement R8, ~~Parts~~Part 8.2 ~~through 8.4~~(if applicable).	The Generator Owner ~~failed to comply with two of the elements in~~declared a Cold Weather Constraint, but failed to update its Corrective Action Plan following a determination by the Compliance Enforcement Authority that the constraint is invalid in accordance with Requirement R8~~, Parts 8.2 through 8.4~~ Part 8.3 (as applicable).	The Generator Owner ~~failed to comply with three of the elements in Requirement R8, Parts 8.2 through 8.4~~declared a Generator Cold Weather Constraint but failed to submit it to the Compliance Enforcement Authority. OR The Generator Owner ~~declared but failed to submit a Generator Cold Weather Constraint~~failed to implement

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				freeze protection measures to provide the necessary capability in accordance with Requirement R8~~,~~ Part ~~8.1~~8.3.
R9.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 36 but fewer than 38 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 38 but fewer than 40 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 40 but fewer than 42 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was performed more than 42 calendar months after CEA validation or after the previous Generator Owner review. OR The Generator Owner failed to review a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9.

D. Regional Variances

None.

E. Associated Documents

Implementation Plan

Calculating Extreme Cold Weather Temperature

EOP-012-3 Technical Rationale

Generator Cold Weather CAP Extension and Constraint Process

Attachment 1

Generator Owners shall determine the applicability of a Generator Cold Weather Constraint declared under Requirements R2, R6, and R7 using the criteria as described below.

~~A~~The definition of a Generator Cold Weather Constraint is ~~any~~: "Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components ~~using the following criteria:~~. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies".

A Generator Cold Weather Constraint can be identified using the following criteria:

~~Pre-Approved~~Known Generator Cold Weather Constraints

The following are circumstances which, if present and confirmed as valid by the ~~Compliance Enforcement Authority~~CEA, will constitute Generator Cold Weather Constraints:

- ~~Wind~~Individual wind turbine towers manufactured~~-~~ prior to October 1, 2027 that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1 for generating units that began commercial operation prior to October 1, 2027.
- ~~Heat~~Implementation of heat tracing or other ~~de-icing~~de-icing technologies for wind turbine blades, that ~~are not~~, through analysis, have been shown to not be effective or not made available ~~in~~by the ~~Generator Owner's location~~OEM for generating units of a comparable types in regions that experience similar winter climate conditions.
- Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities.
- ~~Applying heat to remove~~Removal of accumulated frozen precipitation on solar panels.
- Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters.

Case-by-case Determinations of Generator Cold Weather Constraints

The following situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the ~~Compliance Enforcement Authority~~CEA will these circumstances ~~comprise~~constitute a valid Generator Cold Weather Constraint:

1. The ~~application~~implementation of a specific freeze protection measure will void an equipment warranty.
2. The implementation of a specific freeze protection measure applied to address conditions beyond the manufacturer's design limitations.

~~2.~~3. The ~~application~~implementation of a specific freeze protection measure is precluded by technical or physical limitations. For example:

a. Installing wind breaks around a cooling tower or air-cooled heat exchanger ~~which~~that requires free airflow for its functionality;

b. ~~Applying~~Implementing freeze ~~control~~protection measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system~~.~~;

c. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.

~~3.~~4. A determination, through an analysis, that the freeze protection measure has been shown to be ineffective or that there is no record that such a measure has been effectively utilized on generating unit(s) of comparable types in regions that experience similar winter climate conditions.

~~4.~~5. ~~The application~~A determination, through an analysis, that the implementation of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:

a. The ~~application~~implementation of freeze protection measures, while feasible, would result in the accelerated premature retirement of an existing ~~dispatchable~~ generating unit with no acceptable replacement ~~currently~~ available within the accelerated timeframe;

~~The freeze protection measures would be applied to a generating unit that has a previously published retirement date within three years of the Generator Cold Weather Constraint declaration;~~

b. The ~~application~~implementation of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit~~(s)~~;

c. The ~~application~~implementation of freeze protection measures would reduce the generating unit's ability to provide Real Power or Reactive Power by more than three percent, or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.), when freeze protection measures are not in use; or

d. The ~~application~~implementation of freeze protection measures would reduce the summer net dependable capacity[12], or net dependable capacity at Peak Demand, of the generating unit by more than three percent~~.~~ or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.);

e. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.

[12] "net dependable capacity" refers to the definition used for reporting to the NERC in Generating Availability Data System (GADS) appropriate for the generation type.

~~5.~~6. The implementation of new freeze protection measures to an existing generating unit that has previously communicated a retirement date to the appropriate functional entity (e.g., Transmission Planner (TP), Reliability Coordinator (RC), Balancing Authority (BA), etc.) that falls within three calendar years of the Generator Cold Weather Constraint declaration;

~~6.~~7. The ~~application~~implementation of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.

~~7.~~8. A determination through an analysis that the freeze protection measure is not available on the commercial market for generating units of comparable types in regions that experience similar winter climate conditions.

9. Implementation of freeze protection measures would not increase reliability of a generating unit due to technical or physical constraints on fuel supply which are not due to Fixed Fuel Supply Components, and which are outside the Generator Owner's control.

~~8.~~10. Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Generator Cold Weather Critical Components.

When submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply. An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

Version History

Version	Date	Action	Change Tracking
1	October 1, 2022	Drafted by Project 2021-07	New
2	February 16, 2023	Revisions drafted by Project 2021-07 due to FERC Order and inquiry Recommendations.	Revisions
2	February 15,2024	Board Adopted	
2	June 27, 2024	FERC Approved	
3	October 17, 2024	Drafted by Project 2024-03	As directed by the June 2024 FERC Order

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

This is the second draft of the proposed standard for a formal 18-day comment and ballot period.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	July 17, 2024
SAR posted for comment	July 18, 2024 – August 16, 2024
20-day formal comment period with initial ballot	October 17, 2024 – November 5, 2024

Anticipated Actions	Date
18-day formal comment period with additional ballot	December 3, 2024 – December 20, 2024
15-day formal comment period with additional ballot	January 29, 2025 – February 12, 2025
Board adoption	TBD

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.

Previously Approved Terms

This section includes previously approved terms from EOP-012-1 and EOP-012-2. It is included to help with drafting and the posting of EOP-012-3.

Extreme Cold Weather Temperature – The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 01/01/2000 through the date the temperature is calculated.

Generator Cold Weather Critical Component – Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

Fixed Fuel Supply Component – Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

A. Introduction

1. **Title:** Extreme Cold Weather Preparedness and Operations

2. **Number:** EOP-012-~~2~~3

3. **Purpose:** To address the effects of operating in extreme cold weather by ensuring each Generator Owner has developed and implemented plan(s) to mitigate the reliability impacts of extreme cold weather on its applicable generating units.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Generator Owner

   4.1.2. Generator Operator

   4.2. Facilities:

   4.2.1. Bulk Electric System (BES) generating units. For purposes of this standard, the term "generating unit" subject to these requirements refers to the following Bulk Electric System (BES) resources:

   4.2.1.1. A Bulk Electric System generating resource identified in the BES definition, ~~inclusion~~Inclusion I2 and I4; or

   4.2.1.2. A Blackstart Resource, identified in the BES definition, ~~inclusion~~Inclusion I3.

5. **Effective Date:** See Implementation Plan for Project ~~2021-07 Phase 2~~2024-03.

B. Requirements and Measures

R1. At least once every five calendar years, each Generator Owner shall, for each of its applicable generating unit(s): [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]

1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable generating unit(s) and identify the calculation date ~~and~~, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, if necessary; and

1.1.1. If the ~~re-calculated~~recalculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation~~. If~~, and if new corrective actions are needed, to provide the required operational capability ~~under~~described in Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) calendar months of the recalculation.

1.2. Identify generating unit(s) cold weather data, to include:

1.2.1. Generating unit(s) operating limitations in cold weather to include:

1.2.1.1. Capability and availability;

1.2.1.2. Fuel supply and inventory concerns;

1.2.1.3. Start-up issues;

1.2.1.4. Fuel switching capabilities; and

1.2.1.5. Environmental constraints.

1.2.2. Generating unit(s) minimum:

- Design temperature, and if available, the concurrent wind speed and precipitation;
- Historical operating temperature at least one hour in duration, and if available, the concurrent wind speed and precipitation; or
- Current cold weather performance temperature determined by an engineering analysis, which includes the concurrent wind speed and precipitation.

M1. Each Generator Owner will have evidence documenting its Extreme Cold Weather Temperature calculation, including the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, and design information, operating data, or engineering analysis that supports its generating unit minimum temperature.

R2. Applicable to generating units ~~with a~~that begin commercial operation ~~date~~ [1] on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),~~1~~[2] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

2.1 For generating units for which the Generator Owner first contractually committed to design criteria[3] relevant to this Requirement before June 29, 2023[4]:

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or
- Develop, implement, and complete by April 1, 2028, a Corrective Action Plan~~(s)~~ to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours~~.~~; or
- Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

2.2 For generating units for which the Generator Owner first contractually committed to design criteria[5] relevant to this Requirement on or after June 29, 2023[6]:

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty

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[1] Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing.

~~1~~[2] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[3] Such commitments would be demonstrated by signed contractual commitments, or other similar documented evidence.

[4] In non-U.S. jurisdictions, use the date approved by the applicable government authority in the relevant jurisdiction.

[5] Such commitments would be demonstrated by signed contractual commitments, or other similar documented evidence.

[6] In non-U.S. jurisdictions, use the date approved by the applicable government authority in the relevant jurisdiction.

(20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or

- Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R2, or it has developed, implemented, and completed by April 1, 2028, a Corrective Action Plan, or it has declared a Generator Cold Weather Constraint for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature under Requirement R1 Part 1.2.2 which is equal to or less than the generating unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, ~~and~~ Corrective Action Plan(s) (if applicable), and Generator Cold Weather Constraints (if applicable).

R3. Applicable to generating unit(s) in commercial operation prior to October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[~~2~~7] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature; or
- Develop a Corrective Action Plan to add new or modify existing freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature.

M3. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R3, or it has developed a Corrective Action Plan for the identified issues. Acceptable evidence may include, but is not limited to, the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature per Part 1.2.2 which is equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and Corrective Action Plan(s).

R4. Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness plan(s)

[~~2~~7] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

shall include the following, at a minimum: *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. The lowest calculated Extreme Cold Weather Temperature for each generating unit, as determined in Requirement R1;[38]

4.2. The generating unit cold weather data, as determined in Requirement ~~R1.2~~R1, Part 1.2;

4.3. Documentation identifying Generator Cold Weather Critical Components;

4.4. Documentation of freeze protection measures implemented on Generator Cold Weather Critical Components ~~which~~that includes measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain); and

4.5. Annual inspection and maintenance of generating unit(s) freeze protection measures implemented on Generator Cold Weather Critical Components.

M4. Each Generator Owner will have evidence documenting that its cold weather preparedness plan(s) was implemented and maintained in accordance with Requirement R4. Examples of documentation to demonstrate a cold weather preparedness plan may include existing operating procedures, plans, checklists, or processes. Examples of documentation, to demonstrate inspections and maintenance have been completed, may include, but are not limited to, completed work order(s) from the Generator Owner's work management system and/or freeze protection checklists identifying the measures inspected and maintained for the Generator Cold Weather Critical Components.

R5. Each Generator Owner, in conjunction with its Generator Operator, shall identify the entity responsible for providing ~~the~~ generating unit-specific training, and that identified entity shall provide annual training to ~~its~~the maintenance ~~or~~and operations personnel, as applicable, responsible for implementing the cold weather preparedness plan(s) developed pursuant to Requirement R4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*

M5. Each Generator Operator or Generator Owner will have documented evidence that the applicable personnel completed annual training of the Generator Owner's cold weather preparedness plan(s). This evidence may include, but is not limited to, documents such as personnel training records, training materials, date of training, agendas or learning objectives, attendance at pre-work briefings, review of work order tasks, tailboards, attendance logs for classroom training, and completion records for computer-based training in fulfillment of Requirement R5.

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[38] Generator Owners shall include the lowest calculated Extreme Cold Weather Temperature for the unit, even where subsequent periodic re-calculations under Requirement R1 Part 1.1 cause an increase in the Extreme Cold Weather Temperature.

R6. Each Generator Owner shall, ~~for each~~when experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[49] develop and implement[10] a Corrective Action Plan ~~when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed within 150 days or by July 1, whichever is earlier, and contain at a minimum~~(s) to address identified issues as follows: *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

6.1. The Generator Owner shall develop a Corrective Action Plan for the generating unit experiencing a Generator Cold Weather Reliability Event.

6.2. The Generator Owner shall conduct a review of the applicability of the corrective actions from the Corrective Action Plan developed under Part 6.1 to freeze protection measures on similar equipment at other generating unit(s) owned by the Generator Owner and, if corrective actions are applicable, develop or update a Corrective Action Plan no later than 12 calendar months following the Generator Cold Weather Reliability Event to address the other unit(s).

6.3. For each Corrective Action Plan, the Generator Owner shall include at a minimum:

~~6.1~~6.3.1. A summary of the identified cause(s) ~~for~~of the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;

~~**6.2.** A review of applicability to similar equipment at generating units owned by the Generator Owner; and~~

6.3.2. A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures;

~~6.3~~6.3.3. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until ~~execution~~implementation of the corrective action(s) identified in the Corrective Action Plan~~.~~ is completed;

6.3.4. A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the

[49] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[10] If a Generator Owner has previously experienced a Generator Cold Weather Reliability Event and developed a Corrective Action Plan for the generating unit under Requirement R6 Parts 6.1 or 6.2, the Generator Owner may review and update its existing plan(s) in lieu of developing a new plan.

Generator Cold Weather Critical Components and their freeze protection measures, if required; and

6.3.5. A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows:

6.3.5.1. For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.[11]

6.3.5.2. For other generating unit(s) owned by the Generator Owner, within 24 calendar months of the Generator Cold Weather Reliability Event.

6.4 If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval. The submitted Corrective Action Plan extension request shall include the following:

6.4.1. An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner;

6.4.2. Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and

6.4.3. Updated timetable for implementing the selected actions in Part 6.3.2.

6.5 The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, as applicable.

M6. Each Generator Owner will have ~~documented~~dated evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event ~~at an~~for applicable unit(s) in accordance with Requirement R6. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s) ~~and~~, completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraint(s).

R7. Each Generator Owner~~, for each~~ that is required to develop a Corrective Action Plan ~~developed pursuant to~~under Requirements R1~~, R2,~~ or R3~~, or R6, shall~~ shall develop and implement the Corrective Action Plan in accordance with the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

[11] For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year.

7.1. ~~Include a timetable for implementing the selected corrective action(s) that shall~~For each Corrective Action Plan, the Generator Owner shall include at a minimum the following:

7.1.1. ~~List the action(s) which address(es) existing equipment or~~A list of any actions that require new freeze protection measures, ~~if any, to be completed~~with a timetable specifying completion of such measures within ~~24~~48 calendar months of completing development of the Corrective Action Plan;

~~**7.1.2.** List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar months of completing development of the Corrective Action Plan; and~~

7.1.2. A list of any actions that remedy issues with existing freeze protection measures with a timetable specifying completion of such measures within 24 calendar months of completing development of the Corrective Action Plan (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures);

7.1.3. ~~List the~~A description of updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; and

~~**7.2.** Implement the Corrective Action Plan in accordance with the specified timetables in Requirement R7 Part 7.1;~~

~~**7.3.** Update the Corrective Action Plan action(s) and timetable(s), with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and~~

7.1.4. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed.

7.2. If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R7 Part 7.1 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following:

7.2.1. An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.2.2. Revisions to the selected actions in Parts 7.1, if any, including utilization of operating procedures, if applicable; and

7.2.3. Updated timetable for implementing the selected actions in Part 7.1.

7.4. Document**7.3.** The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Planin accordance with Requirement R8.

M7. Each Generator Owner shall have dated evidence that demonstrates itit developed and implemented eachha Corrective Action Plan, including updating actions or timetables, or has explained in a declaration why corrective actions are not being implemented for applicable unit(s) in accordance with Requirement R8R7. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the implementation of each Corrective Action Plan and the completion of actions for each(s), completed work orders, copies of any Corrective Action Plan including revision history of each Corrective Action Plan and, if applicable, justification to support any changes to corrective action(s) identified in the Corrective Action Plan or timetables exceeding the timelines in Requirement R7 Part 7.1. For each Corrective Action Plan applying to multiple generating units, the timetable shall reflect implementation at each unit addressed in the Corrective Action Plan. Evidence may also include work management program records, work orders, and maintenance records. Any declaration shall contain dated documentation to support constraints identified by the Generator Owner.extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraints.

R8. Each Generator Owner that createsdeclares a Generator Cold Weather Constraint declarationin accordance with Attachment 1 shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

8.1. Review theSubmit its Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and (s) to the CEA as follows:

- For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or
- For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable.

8.2. Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable.; and

8.3. If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to

any extensions approved by the CEA or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2.

M8. Each Generator Owner shall have dated evidence that demonstrates it performed the ~~review and updated operating limitations as needed~~actions in accordance with Requirement R8. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): a copy of the Generator Cold Weather Constraint declaration, evidence the declaration was provided to the Compliance Enforcement Authority in accordance with the specified timeframe, records that document ~~the performance of the review and~~ update(s) to the operating limitations, as needed, and updated Corrective Action Plan(s), if applicable.

R9. The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

M9. Each Generator Owner shall have dated evidence that demonstrates it reviewed Generator Cold Weather Constraints in accordance with Requirement R9. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the performance of the review within the required timeframe.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" (CEA) means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation.

- The Generator Owner shall retain data or evidence to support its current Extreme Cold Weather Temperature calculation and generating unit cold weather data, plus each calculation or revision since the last audit, for Requirement R1 and Measure M1.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R2 or R3 is complete, whichever timeframe is greater, for Requirements R2 and R3 and Measures M2 and M3. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall retain the current cold weather preparedness plan(s), as evidence of review or revision history, plus each version issued since the last audit and evidence of compliance since the last audit for Requirement R4 and Measure M4.
- The Generator Owner or Generator Operator shall keep data or evidence to show compliance for three years for Requirement R5 and Measure M5.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extensions (if applicable), under Requirement R6 is complete, whichever timeframe is greater, for Requirement R6 and Measure M6. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extension (if applicable), under Requirement R7 is complete, whichever ~~time-frame~~time-

frame is greater, for Requirement R7 and Measure M7. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.

- The Generator Owner shall maintain data or evidence to support its current Generator Cold Weather Constraint declaration(s), plus each revision since the last audit, for Requirement R8 and Measure M8.
- The Generator Owner shall maintain data or evidence to support that it reviewed each Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority at least once every 36 calendar months since the last audit, for Requirement R9 and Measure M9.

1.3. "Compliance Monitoring Enforcement Program" or "CMEP" means, depending on the context (1) the NERC Compliance Monitoring and Enforcement Program (Appendix 4C to the NERC Rules of Procedure) or the Commission-approved program of a Regional Entity, as applicable, or (2) the program, department or organization within NERC or a Regional Entity that is responsible for performing compliance monitoring and enforcement activities with respect to Registered Entities' compliance with Reliability Standards.

~~**Compliance Monitoring and Enforcement Program:** As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.~~

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.
R2.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not ~~develop~~complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not ~~develop~~ complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not ~~develop~~ complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not ~~develop~~ complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R3.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for 5% or less of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 20% of its applicable units.
R4.	The Generator Owner implemented a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable Parts within Requirement R4.	The Generator Owner ~~had and~~ maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.
R5.	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • one applicable personnel ~~at~~for a single generating unit; or • 5% or less of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • two applicable personnel ~~at~~for a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • three applicable personnel ~~at~~for a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • four or more applicable personnel ~~at~~for a single generating unit; or • more than 15% of its total applicable personnel.
R6.	The Generator Owner ~~developed a Corrective Action Plan, but not within 150 days or by July 1 as required in Requirement R6~~conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 12 but fewer than 15 calendar months after the Generator Cold Weather Reliability Event.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 15 but fewer than 18 calendar months after the Generator Cold Weather Reliability Event. OR The Generator ~~Owner's~~Owner developed and implemented a Corrective Action Plan where required under Requirement	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 18 but fewer than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator ~~Owner's~~Owner developed and implemented a Corrective Action Plan where required under Requirements	The Generator Owner failed to develop a Corrective Action Plan where required under Requirement R6. OR The Generator Owner developed a Corrective Action Plan where required under Requirement R6, but failed to implement it. OR The Generator Owner failed to conduct a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		R6, but it failed to ~~comply with~~contain one of the elements in Requirement R6, ~~Parts 6.1 through~~Part 6.3.	R6, but it failed to ~~comply with~~contain two of the elements in Requirement R6, ~~Parts 6.1 through~~Part 6.3. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable), but it did not include one of the required elements.	accordance with Requirement R6, Part 6.2, or the Generator Owner conducted the review, but it was conducted more than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator ~~Owner's~~Owner developed and implemented a Corrective Action Plan, but failed to ~~comply with~~contain three or more of the elements in Requirement R6, ~~Parts 6.1 through~~Part 6.3. OR The Generator Owner did not ~~develop~~submit a Corrective Action Plan~~, as required by~~ extension request in accordance with Requirement R6~~.~~, Part 6.4 (if applicable). OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.4 (if applicable), but it did not

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				include two or more of the elements in Requirement R6, Part 6.4. OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s), in accordance with Requirement R6, Part 6.5.
R7.	~~The Generator Owner implemented a Corrective Action Plan, but failed to update the Corrective Action Plan when corrective action(s) changed in accordance with Requirement R7.~~N/A	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include a ~~timetable for implementing the selected corrective actions meeting the criteria of~~description of updates to the cold weather preparedness plan and identification of operating limits as required in Requirement R7 ~~Part 7.1~~, Parts 7.1.3 and 7.1.4.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to ~~implement the~~ include one of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan ~~within the specified timetable or failed to update~~	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include two or more of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
			~~the Corrective Action Plan, with justification, when timetable(s) exceeded the timelines in Requirement R7 Part 7.1.~~ extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include one of the required elements.	it did not include two or more of the required elements. OR The Generator Owner failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable). OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan ~~or failed to~~, and did not document in a declaration ~~why corrective actions are not being implemented~~any Generator Cold Weather Constraint(s) in accordance with Requirement R7 Part 7.3.
R8.	~~N/A~~The Generator Owner declared a Generator Cold Weather Constraint and submitted it to the Compliance Enforcement Authority but it	~~N/A~~The Generator Owner declared a Generator Cold Weather Constraint, but failed to update its operating limitations as required under	The Generator Owner ~~failed to comply with one of the elements in~~declared a Cold Weather Constraint, but failed to update its Corrective Action	The Generator Owner declared a Generator Cold Weather Constraint but failed

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	did not do so within the timeframe provided in Requirement R8 Part 8.1.	Requirement R8, Part 8.2 (if applicable).	Plan following a determination by the Compliance Enforcement Authority that the constraint is invalid in accordance with Requirement R8~~, Parts 8.1 through 8.2~~ Part 8.3 (as applicable).	to submit it to the Compliance Enforcement Authority. OR The Generator Owner failed to ~~comply with all of the elements in~~implement freeze protection measures to provide the necessary capability in accordance with Requirement R8~~, Parts 8.1 through 8.2~~ Part 8.3.
R9.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 36 but fewer than 38 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 38 but fewer than 40 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 40 but fewer than 42 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was performed more than 42 calendar months after CEA validation or after the previous Generator Owner review. OR The Generator Owner failed to review a Generator Cold Weather Constraint

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9.

D. Regional Variances

None.

E. Associated Documents

Implementation Plan

Calculating Extreme Cold Weather Temperature

EOP-012-3 Technical Rationale

Generator Cold Weather CAP Extension and Constraint Process

Attachment 1

Generator Owners shall determine the applicability of a Generator Cold Weather Constraint declared under Requirements R2, R6, and R7 using the criteria as described below.

The definition of a Generator Cold Weather Constraint is: "Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies".

A Generator Cold Weather Constraint can be identified using the following criteria:

Known Generator Cold Weather Constraints

The following are circumstances which, if present and confirmed as valid by the CEA, will constitute Generator Cold Weather Constraints:

- Individual wind turbine towers manufactured prior to October 1, 2027 that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1 for generating units that began commercial operation prior to October 1, 2027.
- Implementation of heat tracing or other de-icing technologies for wind turbine blades, that, through analysis, have been shown to not be effective or not made available by the OEM for generating units of a comparable types in regions that experience similar winter climate conditions.
- Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities.
- Removal of accumulated frozen precipitation on solar panels.
- Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters.

Case-by-case Determinations of Generator Cold Weather Constraints

The following situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the CEA will these circumstances constitute a valid Generator Cold Weather Constraint:

1. The implementation of a specific freeze protection measure will void an equipment warranty.
2. The implementation of a specific freeze protection measure applied to address conditions beyond the manufacturer's design limitations.
3. The implementation of a specific freeze protection measure is precluded by technical or physical limitations. For example:

a. Installing wind breaks around a cooling tower or air-cooled heat exchanger that requires free airflow for its functionality;
b. Implementing freeze protection measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system;
c. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.

4. A determination, through an analysis, that the freeze protection measure has been shown to be ineffective or that there is no record that such a measure has been effectively utilized on generating unit(s) of comparable types in regions that experience similar winter climate conditions.
5. A determination, through an analysis, that the implementation of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:
    a. The implementation of freeze protection measures, while feasible, would result in the accelerated premature retirement of an existing generating unit with no acceptable replacement available within the accelerated timeframe;
    b. The implementation of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit;
    c. The implementation of freeze protection measures would reduce the generating unit's ability to provide Real Power or Reactive Power by more than three percent, or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.), when freeze protection measures are not in use; or
    d. The implementation of freeze protection measures would reduce the summer net dependable capacity[12], or net dependable capacity at Peak Demand, of the generating unit by more than three percent or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.);
    e. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.
6. The implementation of new freeze protection measures to an existing generating unit that has previously communicated a retirement date to the appropriate functional entity (e.g., Transmission Planner (TP), Reliability Coordinator (RC), Balancing Authority (BA), etc.) that falls within three calendar years of the Generator Cold Weather Constraint declaration;

[12] "net dependable capacity" refers to the definition used for reporting to the NERC in Generating Availability Data System (GADS) appropriate for the generation type.

7. The implementation of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.
8. A determination through an analysis that the freeze protection measure is not available on the commercial market for generating units of comparable types in regions that experience similar winter climate conditions.
9. Implementation of freeze protection measures would not increase reliability of a generating unit due to technical or physical constraints on fuel supply which are not due to Fixed Fuel Supply Components, and which are outside the Generator Owner's control.
10. Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Generator Cold Weather Critical Components.

When submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply. An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

Version History

Version	Date	Action	Change Tracking
1	October 1, ~~2024~~2022	Drafted by Project 2021-07	New
2	February 16, 2023	Revisions drafted by Project 2021-07 due to FERC Order and inquiry Recommendations.	Revisions
2	February 15,2024	Board Adopted	
2	June 27, 2024	FERC Approved	
3	October 17, 2024	Drafted by Project 2024-03	As directed by the June 2024 FERC Order

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Implementation Plan

Project 2024-03 Revisions to EOP-012-2
Reliability Standard EOP-012-3

Applicable Standard(s)

- EOP-012-3 Extreme Cold Weather Preparedness and Operations

Requested Retirement(s)

- EOP-012-2 Extreme Cold Weather Preparedness and Operations

Applicable Entities

- Generator Owner
- Generator Operator

Background

The purpose of Project 2024-03 is to address the directives identified by FERC in its June 27, 2024 order approving Reliability Standard EOP-012-2 and directing further modifications. *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61,204 (2024) (June 2024 Order), available here. In that order, FERC found that further improvements are needed to address ambiguous language and other reliability gaps/implementation issues in the standard and related definitions to fully address issues first raised in the Commission's February 2023 Order approving EOP-012-1. *See N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094, PP 3-11 (2023) (February 2023 Order); *reh'g denied*, 183 FERC ¶ 62,034, *order on reh'g*, 183 FERC ¶ 61,222 (2023). In the June 2024 Order, FERC directed that NERC submit the modifications within nine months of the date of the order, or by March 27, 2025.

Proposed EOP-012-3 Requirement R1 is an existing EOP-012-2 requirement that consolidated and clarified requirements for each Generator Owner to calculate the Extreme Cold Weather Temperature for its generating unit location(s) and identify generating unit cold weather data, and to review these calculations and data every five years. Proposed EOP-012-3 Requirement R4 and R5 continue the current requirements under EOP-012-2 (with minimal clarifications in Requirement R4), that all Generator Owners develop cold weather preparedness plans and that all Generator Owners or Generator Operators (as appropriate) conduct annual training on those plans. Proposed EOP-012-3 clarifies which generating unit(s) are subject to the winter operations capability requirements of the standard (Requirements R2 and R3). Proposed EOP-012-3 Requirement R6 provides clarification regarding responses to a Generator Cold Weather Reliability Event that may require Corrective Action Plans (CAPs). Proposed EOP-012-3 Requirement R7 specifies timelines for the completion of Corrective Action Plans, consistent with the February 2023 Order and FERC directives in its June 2024 Order. The drafting team crafted language to meet the concern of Generator Owners regarding

timelines for units under consideration or development. The language reflects FERC's concern regarding applicability of Corrective Action Plans to the correct Generator Owner. Proposed EOP-012-3 Requirement R9 requires Generator Owners to review constraint declarations at least every 36 calendar months, or as needed, when a change of status occurs and ensures operating limitations caused by the constraints are clearly identified. The revised *Glossary* term for Generator Cold Weather Constraint, and new Attachment 1 both clarify the circumstances under which Generator Owners may declare Generator Cold Weather Constraints.

For additional information on the FERC Order directives addressed in proposed Reliability Standard EOP-012-3, see the Consideration of Directives, available on the Project 2024-03 project page.

General Considerations

This implementation plan reflects past consideration that entities need time to develop, implement, and maintain cold weather plans; identify Generator Cold Weather Critical Components, and identify freeze protection measures. The implementation plan also considers the FERC directives regarding the need for an accelerated effective date of directed changes and abbreviated implementation periods for generator winterization measures. FERC has repeatedly expressed an urgency in completing cold weather Reliability Standards and having them implemented in a timely manner to address the risks cold weather events present to the reliability of the Bulk-Power System. FERC noted the five core directives to NERC in the June 2024 Order are not new issues, but rather targeted modifications necessary to fully address issues identified in FERC's prior February 2023 Order. *See* June 2024 Order at P 30.

In consideration of these factors, and to ensure entities have sufficient notice of their revised obligations under Reliability Standard EOP-012-3, the proposed implementation plan provides that the standard shall become effective on the later of October 1, 2025, which is the date Reliability Standard EOP-012-2 will be fully enforceable in the United States, or three months following regulatory approval.

The drafting team determined that later phased-in compliance dates were not necessary for the revised requirements in EOP-012-3, as the practical impact of implementing the proposed changes, in light of the regulatory history described above, is not expected to be significant:

- For revised Requirement R2, units further into design or construction have separate requirements from those units in the early phases of design: the units further along in the design/construction phase are allowed to develop, implement, and complete Corrective Action Plans to meet the more rigorous requirements for new generating units, whereas units in the early stages of design are expected to meet the more rigorous requirements unless a Generator Cold Weather Constraint applies. Additional time is not needed to implement this change.
- For revised Requirement R6, relating to Generator Cold Weather Reliability Events, the language reflects the FERC directives regarding Corrective Action Plans, Corrective

Action Plan extensions, and consideration of the applicability of corrective actions across a fleet for Generation Owners that had a generating unit(s) that experienced a Generator Cold Weather Reliability Event. Additional time to implement these changes is not needed, given the conditions in which a Corrective Action Plan may be needed for a Generator Cold Weather Reliability Event.

- For revised Requirement R7, the drafting team clarified the applicability of Corrective Action Plan requirements and provided Corrective Action Plan extension request language similar to that found in Reliability Standard TPL-007-4 to address the June 2024 Order. Additional guidance is provided below.

Additional guidance is provided to aid in the orderly implementation of the standard as entities transition from compliance with Reliability Standard EOP-012-2 to Reliability Standard EOP-012-3.

Effective Date

The effective dates for the proposed Reliability Standards are provided below. Where the drafting team identified or recognized the need for a longer implementation period for compliance with a particular section of a proposed Reliability Standard (i.e., an entire Requirement or a portion thereof), the additional time for compliance with that section is specified below. The phased-in compliance date for those particular sections represents the date that entities must be compliant with that particular section of the Reliability Standard, even where the Reliability Standard goes into effect at an earlier date.

EOP-012-3 and Definitions

Where approval by an applicable governmental authority is required, the standard and associated definitions shall become effective on the later of: (1) October 1, 2025; or (2) the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.

Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

Additional Implementation Information

EOP-012-3 Requirement R1

In the United States, entities were required to become compliant with Requirement R1 by the effective date of EOP-012-2 (October 1, 2024) in accordance with that implementation plan. Entities

shall perform their first periodic review under Reliability Standard EOP-012-3 Requirement R1 by no more than 60 months after the effective date of **EOP-012-2**.[1]

EOP-012-3 Requirement R2 – New Generating Units entering commercial operation on/after October 1, 2027

Entities shall become compliant with Requirement R2 no later than the commercial operations date for the applicable unit. Any Generator Cold Weather Constraint shall be submitted in accordance with the timeline provided in Requirement R8.

EOP-012-3 Requirement R3 – Existing and New Generating Units entering commercial operation before October 1, 2027

Entities beginning commercial operation after the effective date of EOP-012-3 shall become compliant with Requirement R3 no later than the commercial operations date for the applicable unit.

EOP-012-3 Requirement R8

Entities shall review all Generator Cold Weather Constraints previously declared under Reliability Standard EOP-012-2 for compliance with Reliability Standard EOP-012-3 Attachment 1 by the effective date. Each entity shall submit any previously declared Generator Cold Weather Constraints to the Compliance Enforcement Authority (CEA) no later than 45 days following the effective date of Reliability Standard EOP-012-3. Newly declared Generator Cold Weather Constraints shall be submitted in accordance with the timelines specified in Requirement R8.

EOP-012-3 Requirement R9

If applicable, entities shall review each Generator Cold Weather Constraint in accordance with Requirement R9 no later than 36 calendar months following validation by the Compliance Enforcement Authority.

Retirement Date of EOP-012-2

Reliability Standard EOP-012-2 shall be retired immediately prior to the effective date of Reliability Standard EOP-012-3 in the particular jurisdiction in which the revised standard is becoming effective.

[1] In jurisdictions where EOP-012-2 has not become effective, entities shall perform their first periodic review under Reliability Standard EOP-012-3 Requirement R1 by no later than five calendar years following the initial calculation of the Extreme Cold Weather Temperature, or as directed by the applicable governmental authority in the jurisdiction.

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Implementation Plan

Project 2024-03 Revisions to EOP-012-2
Reliability Standard EOP-012-3

Applicable Standard(s)

- EOP-012-3 Extreme Cold Weather Preparedness and Operations

Requested Retirement(s)

- EOP-012-2 Extreme Cold Weather Preparedness and Operations

Applicable Entities

- Generator Owner
- Generator Operator

Background

The purpose of ~~this project~~Project 2024-03 is to address the directives identified by FERC in its June 27, 2024 order approving Reliability Standard EOP-012-2 and directing further modifications. *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61,204 (2024) (June 2024 Order), available here. In that order, FERC found that further improvements are needed to address ambiguous language and other reliability gaps/implementation issues in the standard and related definitions to fully address issues first raised in the Commission's February 2023 Order approving EOP-012-1. ~~FERC directed that NERC submit the modifications within nine months of the date of the order, or by March 27, 2025.~~

~~**Project 2024-03**~~

~~Project 2024-03 is a project to address FERC directives in the June 2024 Order approving EOP-012-2. Proposed Reliability Standard EOP-012-3 revises the EOP-012-2 standard by providing and clarifying further improvements needed to be made to address ambiguous language and address other reliability gaps/implementation issues in the standard and related definitions to fully address issues first raised in the Commission's February 2023 Order approving EOP-012-1.~~ *See N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094, PP 3-11 (2023) (February 2023 Order); *reh'g denied*, 183 FERC ¶ 62,034, *order on reh'g*, 183 FERC ¶ 61,222 (2023). In the June 2024 Order ~~approving EOP-012-2~~, FERC directed that NERC submit the ~~directed~~ modifications within nine months of the date of the order, or by March 27, 2025.

Proposed EOP-012-3 Requirement R1 is an existing EOP-012-2 requirement that consolidated and clarified requirements for each Generator Owner to calculate the Extreme Cold Weather Temperature for its generating unit location(s) and identify generating unit cold weather data, and to review these calculations and data every five years. Proposed EOP-012-3 Requirement R4 and R5 continue the current requirements under EOP-012-2 (with minimal clarifications in Requirement R4),

that all Generator Owners develop cold weather preparedness plans and that all Generator Owners or Generator Operators (as appropriate) conduct annual training on those plans. Proposed EOP-012-3 clarifies which generating unit(s) are subject to the winter operations capability requirements of the standard (Requirements R2 and R3). Proposed EOP-012-3 Requirement R6 provides clarification regarding responses to a Generator Cold Weather Reliability Event that may require Corrective Action Plans (~~CAP~~CAPs). Proposed EOP-012-3 Requirement R7 specifies timelines for the completion of Corrective Action Plans, consistent with the February 2023 Order and FERC directives in ~~the~~its June 2024 ~~FERC~~ Order. The drafting team crafted language to meet the concern of Generator Owners regarding timelines for units under consideration or development. The language reflects FERC's concern regarding applicability of Corrective Action Plans to the correct Generator Owner. Proposed EOP-012-3 Requirement ~~R8~~R9 requires Generator Owners to review constraint declarations at least every ~~24~~36 calendar months, or as needed, when a change of status occurs and ensures operating limitations caused by the constraints are clearly identified. The revised *Glossary* term for Generator Cold Weather Constraint, and new Attachment 1~~, provides clarity to~~ both clarify the circumstances under which Generator Owners may declare Generator Cold Weather Constraints~~ and thus further clarifies the requirements of the standard~~.

For additional information on the FERC Order directives addressed in proposed Reliability Standard EOP-012-3, see the Consideration of Directives, available on the Project 2024-03 project page.

General Considerations

This implementation plan reflects past consideration that entities ~~needed~~need time to develop, implement, and maintain cold weather plans~~,~~; identify Generator Cold Weather Critical Components, and identify freeze protection measures. The implementation plan also considers the FERC directives regarding the need for an accelerated effective date of directed changes and abbreviated implementation periods for generator winterization measures. FERC has repeatedly expressed an urgency in completing cold weather Reliability Standards and having them implemented in a timely manner to address the risks ~~presented by~~ cold weather events ~~on~~present to the reliability of the Bulk-Power System. FERC noted the five core directives to NERC in the June 2024 Order are not new issues, but rather targeted modifications necessary to fully address issues identified in FERC's prior February 2023 Order. *See* June 2024 Order at P 30.

In consideration of these factors, and to ensure entities have sufficient notice of their revised obligations under Reliability Standard EOP-012-3, the proposed implementation plan provides that the standard shall become effective on the later of October 1, 2025, which is the date Reliability Standard EOP-012-2 will be fully enforceable in the United States, or three months following regulatory approval.

The drafting team determined that later phased-in compliance dates were not necessary for the revised requirements in EOP-012-3, as the practical impact of implementing the proposed changes, in light of the regulatory history described above, is not expected to be significant:

- For revised Requirement R2, units further into design or construction have separate requirements from those units in the early phases of design: the units further along in the design/construction phase are allowed to develop, implement, and complete Corrective Action Plans to meet the more rigorous requirements for new generating units, whereas units in the early stages of design are expected to meet the more rigorous requirements unless a Generator Cold Weather Constraint applies. Additional time is not needed to implement this change.
- For revised Requirement R6, relating to Generator Cold Weather Reliability Events, the language reflects the FERC directives regarding Corrective Action Plans, Corrective Action Plan extensions, and consideration of the applicability of ~~Corrective Action Plan~~ corrective actions across a fleet for Generation Owners that had a generating unit(s) that experienced a Generator Cold Weather Reliability Event. Additional time to implement these changes is not needed, given the conditions in which a Corrective Action Plan may be needed for a Generator Cold Weather Reliability Event.
- For revised Requirement R7, the drafting team clarified the applicability of Corrective Action Plan requirements and ~~implemented a~~provided Corrective Action Plan extension ~~process~~request language similar to that found in Reliability Standard TPL-007-4 to address the June 2024 Order. Additional guidance is provided below.

Additional guidance is provided to aid in the orderly implementation of the standard as entities transition from compliance with Reliability Standard EOP-012-2 to Reliability Standard EOP-012-3.

Effective Date

The effective dates for the proposed Reliability Standards are provided below. Where the drafting team identified or recognized the need for a longer implementation period for compliance with a particular section of a proposed Reliability Standard (i.e., an entire Requirement or a portion thereof), the additional time for compliance with that section is specified below. The phased-in compliance date for those particular sections represents the date that entities must be compliant with that particular section of the Reliability Standard, even where the Reliability Standard goes into effect at an earlier date.

EOP-012-3 and Definitions

Where approval by an applicable governmental authority is required, the standard and associated definitions shall become effective on the later of: (1) October 1, 2025; or (2) the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.

Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

~~Effective Date and Phased-In Compliance Dates~~ Additional Implementation Information

~~Compliance Date for~~ EOP-012-3 Requirement R1

~~Entities~~In the United States, entities were required to become compliant with Requirement R1 by the effective date of EOP-012-2 (October 1, 2024) in accordance with that implementation plan. Entities shall perform their first periodic review under Reliability Standard EOP-012-3 Requirement R1 by no more than 60 months after the effective date of **EOP-012-2**.[1]

~~Compliance Date for~~ EOP-012-3 Requirement R2 – New Generating Units entering commercial operation on/after October 1, 2027

Entities shall become compliant with Requirement R2 no later than the commercial operations date for the applicable unit. Any Generator Cold Weather Constraint shall be submitted in accordance with the timeline provided in Requirement R8.

~~Compliance Date for~~ EOP-012-3 Requirement R3 – Existing and New Generating Units entering commercial operation before October 1, 2027

Entities beginning commercial operation after the effective date of EOP-012-3 shall become compliant with Requirement R3 no later than the commercial operations date for the applicable unit.

~~Compliance Date for~~ EOP-012-3 Requirement ~~R6~~R8

~~Entities shall comply with Requirement R6 within the timeframes listed within the requirement if a Generator Cold Weather Reliability Event has occurred.~~

~~Compliance Date for EOP-012-3 Requirement R7~~

~~Entities shall comply with Requirement R7 within the timeframes listed within the requirement if a Corrective Action Plan is required.~~

~~Compliance Date for EOP-012-3 Requirement R8~~

~~Each entity~~Entities shall review all Generator Cold Weather Constraints previously declared under Reliability Standard EOP-012-2 for compliance with Reliability Standard EOP-012-3 Attachment 1 by the effective date. ~~The~~Each entity shall submit any previously declared Generator Cold Weather Constraints to the Compliance Enforcement Authority (CEA) no later than 45 days following the effective date of Reliability Standard EOP-012-3. Newly declared Generator Cold Weather Constraints shall be submitted in accordance with the timelines specified in Requirement R8.

EOP-012-3 Requirement R9

If applicable, entities shall review each Generator Cold Weather Constraint in accordance with Requirement R9 no later than 36 calendar months following validation by the Compliance Enforcement Authority.

[1] In jurisdictions where EOP-012-2 has not become effective, entities shall perform their first periodic review under Reliability Standard EOP-012-3 Requirement R1 by no later than five calendar years following the initial calculation of the Extreme Cold Weather Temperature, or as directed by the applicable governmental authority in the jurisdiction.

Retirement Date of EOP-012-2

Reliability Standard EOP-012-2 shall be retired immediately prior to the effective date of Reliability Standard EOP-012-3 in the particular jurisdiction in which the revised standard is becoming effective.

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Technical Rationale

Project 2024-03 Revisions to EOP-012-2
Reliability Standard EOP-012-3 | December 2024

EOP-012-3 – Extreme Cold Weather Preparedness and Operations

Introduction

This document explains the technical rationale and justification for the proposed Reliability Standard EOP-012-3. It provides stakeholders and the ERO Enterprise with an understanding of the technology and technical requirements in the Reliability Standard. This Technical Rationale and Justification for EOP-012-3 is not a Reliability Standard and should not be considered mandatory and enforceable.

Background

From February 8 through February 20, 2021, extreme cold weather and precipitation caused large numbers of generating units to experience outages, derates or failures to start, resulting in energy and transmission emergencies (referred to as the "Event"). The total Event firm load shed was the largest controlled firm load shed event in U.S. history and was the third largest in quantity of outaged megawatts (MW) of load after the August 2003 Northeast blackout and the August 1996 West Coast blackout. The Event was most severe from February 15 through February 18, 2021, and it contributed to power outages affecting millions of electricity customers throughout the regions of ERCOT, SPP, and MISO South. Additionally, the February 2021 event is the fourth cold weather event in the past 10 years, which jeopardized BPS reliability. A joint inquiry was conducted to discover reliability-related findings and develop recommendations from Federal Energy Regulatory Commission (FERC), NERC, and Regional Entity staff. The FERC, NERC, and Regional Entity Staff Report into the February 2021 Cold Weather Outages[1] ("Joint Inquiry Report") was published on November 16, 2021.

Project 2021-07 was a two-phase project to address the 10 sub-recommendations in Key Recommendation 1 of the Joint Inquiry Report for new or enhanced NERC Reliability Standards. Reliability Standard EOP-012-1 was originally developed to address Recommendations 1d, 1e, and 1f of the Joint Inquiry Report through new and enhanced requirements for generator preparedness for extreme cold weather conditions. Reliability Standard EOP-012-2 was revised to address Key Recommendations 1a, 1b, and 1c as well as the FERC directives in the February 2023 Order approving the Phase 1 standards EOP-011-3 and EOP-012-1.[2] Reliability Standard EOP-012-3 is being revised to address FERC directives in the June 2024 Order approving EOP-011-4 and EOP-012-2[3].

1 The February 2021 Cold Weather Outages in Texas and the South Central United States | FERC, NERC and Regional Entity Staff Report | Federal Energy Regulatory Commission

2 *N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094 (2023) (FERC Order), *notice denying reh'g and providing for further consideration*, 183 FERC ¶ 62,034 (2023).

3 *N.AM.Elec.Reliability Corp.*, 187 FERC ¶ 61,204 (FERC Order)

Defined Terms

Previous DTs developed five defined terms to be added to the NERC Glossary of Terms to make the requirements easier to understand. Project 2024-03 updated one term (Generator Cold Weather Constraint) to meet the FERC directives in the June 2024 Order and provided additional language to clarify issues noted during the development of EOP-012-3, 2024 Small Group Advisory Session(s), and input received during outreach with industry. These five terms are:

Extreme Cold Weather Temperature

The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 1/1/2000 through the date the temperature is calculated.

The definition of Extreme Cold Weather Temperature (ECWT) was developed by the 2021-07 Drafting Team (DT) to provide clarity to the Generator Owner (GO) on determining what temperature triggers the requirement obligations. Each GO should select a reliable source of data from a recording location near the plant to determine their ECWT. Sources could include, for example, the National Weather Service (NWS) or National Oceanographic and Atmospheric Administration (NOAA) weather stations, Federal Aviation Administration (FAA) weather stations, or Environment and Climate Change Canada location for Canadian entities[4], etc. NOAA's National Centers for Environmental Information provides Climate Data Online (CDO) as a free resource that includes quality-controlled weather data and 30-year Climate Normals[5]. In general, GOs should use the location nearest the plant, but may select a further location if geographic or local climatic patterns make a further location more representative of the weather at the generating unit. GOs may use on-site weather stations if data, which reasonably matches reliable nearby off-site sources since January 1, 2000, is available. The starting period chosen by the 2021-07 DT to gather data to determine the lowest temperatures that occur near a facility is based on the completion of the modernization of the National Weather Service project known as MAR (Modernization and Associated Restructuring). This project was completed in the year 2000. In general, the National Weather Service modernization provides weather data to be available at most large airports. This will make it fairly accessible for companies to gather data and perform the required analysis. The December through February timeframe was selected to correspond to the meteorological winter, as defined by NOAA.[6]

The 2021-07 DT discussed methods for determining an ECWT with engineering design professionals, and it was determined that it is typical engineering practice to use a statistical approach to determine the design temperature when implementing generation facility freeze protection measures. The 2021-07 DT determined that only winter temperature values (i.e. between December and February) shall be used for the statistical approach and based on analysis of multiple weather data sites, it was determined that by using the lowest 0.2 percentile, there will be sufficient data points to ensure that a single hour at a temperature that may not be accurate, or may be a statistical anomaly, doesn't result in an overly conservative design or preclude the ability of the GO to use historical operating data to prove compliance to the requirements. The 2021-07 DT selected the 0.2 percentile of winter month temperatures since 1/1/2000 to identify a temperature which has been rarely surpassed, but which allows some margin for a

4 Environment and Climate Change Canada - Canada.ca
5 U.S. Climate Normals | National Centers for Environmental Information (NCEI) (noaa.gov)
6 Meteorological Versus Astronomical Seasons | News | National Centers for Environmental Information (NCEI) (noaa.gov)

GO to have previously demonstrated successful operation. The 2021-07 DT considered using the lowest recorded hourly ambient temperature, but upon further review of the historical weather data and generally accepted design principles, determined that the statistical approach to setting the ECWT for a site's location was more reasonable.

The 2024-03 DT recognized comments and concerns raised during the 2024 Small Group Advisory Session on cold weather preparedness regarding application of the ECWT calculation if hourly temperature values were questionable. If complete data sets are not available (e.g., data is corrupt or missing) at a single weather station back to January 1, 2000, the GO should document the methodology they use to determine their ECWT, such as appending data from multiple weather stations or selecting a complete or partial data set from a weather station further away from the facility. The 2021-07 and 2024-03 DTs realized that a complete data set (i.e., all hours of every day of every year for the months of December, January, and February) may not be available due to a variety of technical reasons. To that point, the Generator Owner's approach in handling the missing/corrupt data should be documented in their methodology and available to Compliance Monitoring Enforcement Program (CMEP) staff as needed. To accommodate concerns raised by industry, the 2024-03 DT felt additional clarification was needed to address missing data and set an expectation for entities to meet when reviewing the inputs to the ECWT calculations within Requirement R1. Entities should be able to explain the reasoning behind the substitution of missing or corrupt data points.

It has been noted that there will likely be the possibility of missing data utilized for the ECWT calculation. The 2024-03 DT discussed data completeness concerns and, after considering the likely variability in such hourly temperature data sets across North America, ultimately chose not to establish a requirement regarding the size of the data set necessary to support an accurate ECWT determination. The 2024-03 DT understands that the entity may very well have an overall approach to missing data versus a unit-by-unit approach. By the nature of the percentile function, significant data loss may not change the ECWT value. The key is where the data is missing in relationship to the ECWT determined value. Missing hourly temperature values above the ECWT has limited impact to the determination. However, missing hourly temperature values below the ECWT can impact the ECWT determination value. For example, the 0.2 percentile of 50,000 hourly values equates to 100 hourly values (in this case the lowest recorded hourly temperatures.) If there are missing hourly values that would have been included in the list of the lowest 100 hourly temperature values, those values should be explained by the entity and may warrant further review. Missing data in the lowest 100 values effectively has the potential of moving the ECWT value higher but that is very dependent upon the data set. This simplified example is intended to demonstrate a principle; not establish a fixed number of lowest temperature values of concern. Any data set with missing or invalid hourly temperature values recorded during the coldest periods since January 1, 2000 should be carefully evaluated to assure that any adjustments utilized on those particular values are properly addressed in a transparent and logical way. Please reference the Calculating Extreme Cold Weather Temperature document drafted by the 2021-07 DT and updated by the 2024-03 DT for an example of how to calculate the ECWT[7].

[7] Report (nerc.com)

Generator Cold Weather Critical Component

Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

The 2021-07 DT felt the best method to address where freeze protection measures should be implemented was to define a term which specifies a subset of components that may be susceptible to freezing and are critical to the operation of generating units. GOs should consider previous freeze-related issues experienced by the generating unit(s), as well as actions taken to mitigate those freeze-related issues, when establishing its list of Cold Weather Critical Components. The 2021-07 DT also felt it is appropriate to specifically exclude components that are not susceptible to freezing due to being inside heated buildings that maintain the interior temperature above freezing.

The 2021-07 DT's intent with regard to the language "that is under the Generator's Owner's control" was to clearly delineate that cold weather events external to the generation site such as loss of fuel supply or loss of auxiliary power to the site that resulted in a Generator Cold Weather Reliability Event (see definition below) would not be subject to this standard. Furthermore, ice buildup on transmission lines and/or high voltage lines between the generating station and point of interconnection with the Transmission Owner would not constitute a freezing condition in the context of this Standard, and therefore, these lines would not be considered a Generator Cold Weather Critical Component.

The 2021-07 DT's intent with the use of the phrase "permanent building" is to refer to a structure that is in place year-round, shall accommodate personnel entry, and has a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit for the purpose of protecting components from freezing (e.g. heated container that protects inverter-based resources or battery energy systems). The 2024-03 DT recognized comments and concerns raised during the 2024 Small Group Advisory Session on cold weather preparedness regarding heating of the "permanent building." The HVAC/heating system is not a freeze protection measure in terms of being included in the cold weather preparedness plan as it is not protecting a Generator Cold Weather Critical Component (per the definition) nor is it a Generator Cold Weather Critical Component. The 2024-03 DT expects the HVAC/heating system to be part of routine maintenance and monitoring to ensure that the heated building remains above 32 degrees Fahrenheit.

Fixed Fuel Supply Component

Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

The 2021-07 DT wanted to clarify the boundaries of responsibility for the GO as it relates to sites having fuel handling equipment within their control and responsibility to provide freeze protection. The intent of this definition is to clarify that mobile equipment is not part of this requirement, but permanent fixed equipment impacting fuel delivery needed for generation is included.

Generator Cold Weather Reliability Event

One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

Key Recommendation 1d: To require Generator Owners that experience outages, failures to start, or derates due to freezing to review the generating unit's outage, failure to start, or derate and develop and implement a corrective action plan (CAP) for the identified equipment, and evaluate whether the CAP applies to similar equipment for its other generating units. Based on the evaluation, the Generator Owner will either revise its cold weather preparedness plan to apply the CAP to the similar equipment, or explain in a declaration (a) why no revisions to the cold weather preparedness plan are appropriate, and (b) that no further corrective actions will be taken. The standard drafting team should specify the specific timing for the CAP to be developed and implemented after the outage, derate, or failure to start, but the CAP should be developed as quickly as possible, and be completed by no later than the beginning of the next winter season.

The Key Recommendation from the Joint Inquiry Report recommends a Reliability Standard that requires GOs to develop a Corrective Action Plan for generating units that experience outages, failures to starts, or derates due to freezing. The Joint Inquiry Report identifies that most of the outages and derates in the February 2021 event were due to freezing of instrumentation, transmitters, sensing lines, or wind turbine blades (p 166 in the Joint Inquiry Report). As such, the 2021-07 DT followed the Joint Inquiry Report recommendation to require a Corrective Action Plan when the apparent cause of the event is freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, or freezing rain) on equipment. The 2021-07 DT felt that it was important to clearly call out freezing precipitation as these events were included in the outages and derates that identified as freezing in the Joint Inquiry Report. Furthermore, Key Recommendation 1c of the report requires GOs to account for the effect of precipitation. The 2021-07 DT has developed parameters around these events to clarify a reasonable baseline of what level of derate qualifies as an event, and provide additional language to identify what constitutes a start-up failure. With the additional clarifications, the 2021-07 DT determined that the standard would benefit from a defined term, to clearly and efficiently state what constitutes an event. The result is a new defined term, Generator Cold Weather Reliability Event, that defines the circumstances for which a Corrective Action Plan is required (i.e., when a freezing event affects the equipment within the control of the GO). The defined term will make the standard easier to understand and implement by providing clear and reasonable factors to determine whether the impact of an event requires mitigation. The 2021-07 DT is

using the definition of apparent as defined in the Webster's dictionary as "clear or manifest to the understanding".

Note that the 2024-03 DT provided additional language to alleviate concerns regarding the administrative nature of developing Corrective Action Plans specifically for similar noted issues occurring at one or more locations (e.g., freezing precipitation on wind turbines). Care should be taken if updating existing Corrective Action Plans for additional units especially in terms of effectively capturing the actions and timetables applicable to the additional units.

The Corrective Action Plan requirement applies to any forced outage due to freezing, regardless of duration. Derates, which are short lived (specified as four hours by the 2021-07 DT) or of small capacity impact (specified as less than 20 MW by the 2021-07 DT, which roughly corresponds with the threshold for Bulk Electric System (BES) impacting generation units), are excluded from the Corrective Action Plan requirement to limit the administrative burden to GOs for events that are minimally impacting to the BES. Also excluded are proactive operational actions to limit the potential of forced outages or derates. It should be noted that nothing in this standard prevents a GO from taking its own corrective actions resulting from such events. Startup failures for conventional generation are defined using the GADS definition with the removal of "following an outage or reserve shutdown", since reserve shutdown is defined differently by NERC in GADS than it is by some of the Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs). From the GADS data reporting instructions, the startup period for each unit is determined by the operating company. It is unique for each unit and may depend on the condition of the unit at the time of startup (cold, warm, or hot). A typical unit startup occurs in three phases: warm up, synchronization, and ramp up. NERC defines a startup period to begin with the command to start and end when the unit is synchronized. A startup failure begins when a problem, preventing the unit from synchronizing, occurs. The startup failure ends when the unit is synchronized, another startup failure occurs, or the unit enters another permissible state.

The 2021-07 DT determined that Corrective Action Plans will be required for any freezing event that occurs at temperatures above the generator site's ECWT. By using the site's ECWT, as opposed to the generator unit minimum temperature as defined by the GO in Requirement R1 Part 1.2.2 as the threshold, this achieves the following:

- Provides a consistent basis for the temperature at which CAPS are required for all GOs
- Provides a consistent basis for when Corrective Action Plans are required for all generation types
- Provides a consistent basis for when Corrective Action Plans are required regardless of the level of effort that GOs may have applied to-date winterizing their generators such that they can operate to the ECWT that their sites will reasonably experience
- Removes any incentive (perceived or real) to not further winterize GOs generating sites to meet the ECWT at the GO site by not providing a window where one site might not be subject to the Corrective Action Plan requirement while sites in the same vicinity experiencing the same temperatures are subject to this requirement

- Removes any disincentive for GOs to design the units to operate well below the ECWT for a site by not requiring them to perform Corrective Action Plans while sites in the same vicinity experiencing the same temperatures are subject to this requirement

Generator Cold Weather Constraint

Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.

The 2024-03 DT reviewed the material from the June 2024 Order when determining how best to update the Generator Cold Weather Constraint definition. The 2024-03 DT relied upon industry and FERC guidance as a basis for updating the definition language and the process captured in Attachment 1 of EOP-012-3. The 2024-03 DT also ensured that constraint language would be fully captured within the Standard itself through Attachment 1.

The 2024-03 DT felt that an Attachment that included specific language further explaining Generator Cold Weather Constraints with discrete known Generator Cold Weather Constraints and other case-by-case Generator Cold Weather Constraints meets the FERC (and industry) expectations to provide unambiguous, objective, and auditable language. The 2024-03 DT discussed providing clarity with examples knowing that additional instances or conditions that may be considered a Generator Cold Weather Constraint may exist.

Per the FERC Order, NERC staff is responsible to provide a process describing the receipt, evaluation, approval (as needed), and validation of Generator Cold Weather Constraints. This process is captured in the Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") document.

Attachment 1 contains a non-comprehensive list of known Generator Cold Weather Constraints as well as a list of situations, circumstances, and criteria that may constitute a Generator Cold Weather Constraint. The Generator Owner **must** submit all Generator Cold Weather Constraints to the CEA for approval, regardless of which category it might fall into.

Once a declaration is approved by the CEA, it is considered valid. It is the GO's responsibility to document, in the Generator Cold Weather Constraint declaration, the circumstances and reasons why the modification needed to address the freeze protection measure(s) is not being implemented. A Generator Cold Weather Constraint declaration, that no further corrective actions will be taken, is expected to be used sparingly.

The 2024-03 DT is intentionally leaving room for additional instances of Generator Cold Weather Constraints as it would be impossible to foresee every potential circumstance that could possibly necessitate a review of potential freeze protection technologies across the breadth of the US and Canada and the breadth of generating unit types and ages that fall under this Standard. Furthermore, the 2024-

03 DT wants to ensure that the Standard language supports the adoption of new freeze protection measure practices, methods, or technologies while not immediately requiring a new freeze protection measure practice, method, or technology to be implemented industry-wide when a leading utility pilots a novel approach, as this would be a disincentive to utilities piloting new technologies. The 2024-03 DT encourages additional studying and implementation of freeze protection measures to remove Generator Cold Weather Constraints as appropriate over time.

In the June 2024 Order, there was a directive to change the frequency of Generator Cold Weather Constraint reviews to facilitate consideration of new freeze protection measure technologies to reduce the risk resulting from the need for a Generator Cold Weather Constraint. That change is captured in Requirement R9 discussed later in this Technical Rationale document.

Facilities

After reviewing this reference material and the efforts of the 2021-07 DT, the 2024-03 DT determined that EOP-012-3 should continue to apply to all Bulk Electric System (BES) generating units in order to ensure consistency in extreme cold weather preparedness. The Applicability section first defines "generating unit" as a BES resource. The NERC Glossary of Terms provides the foundation for what BES resources are included in the definition (see Inclusions I2 through I4). Additionally, Blackstart Resources are also specifically declared subject to the winterization requirements. Such Blackstart Resources, consistent with the NERC Glossary of Terms, are those units designated in the Transmission Operator's restoration plans. Proposed EOP-012-3 clarifies which Facilities and their Generator Cold Weather Critical Components are subject to implementing freeze protection measures through specific language in Requirements R2 and R3. The 2024-03 DT briefly discussed Generator Owner Category 2 Inverter-Based Resource (IBR) applicability to EOP-012-3 but it was noted the applicability is under review as part of the Registration of IBR Work Plan so no changes were presented.

Rationale for Requirement R1

The Project 2024-03's Technical Rationale language for Requirement R1 did not substantially change from 2021-07 DT language and, as such, use of DT below is referencing 2021-07 DT. Much of the criteria of R1 is carried over from the previously approved EOP-011 Standard and requires the GO to document several cold weather performance parameters for the unit. This information is valuable, and in some cases, must be shared with other entities. For Requirement R1 Part 1.1, the GO is required to calculate the Extreme Cold Weather Temperature (ECWT) for each unit using a reliable source of data (See the supporting document "Calculating Extreme Cold Weather Temperature"). The DT believes that the GO is in the best position to select the most representative weather information relative to its generating unit. The ECWT will be updated if a new lower ECWT is determined under the periodic review requirement of R1. Defining the operating limitations in Requirement R1 Part 1.2.1 will make affected personnel more aware of unit capabilities and constraints as well as systems and practices that may be necessary to ensure reliability in cold weather, particularly when alternative fuels are involved. In addition, the unit minimum temperature identified in Requirement R1 Part 1.2.2 is used to demonstrate compliance with Requirement R3 for existing units. The DT chose one hour of historical operating data recognizing that there is extremely limited historical operating data available for a unit below their ECWT. This was not to infer that the DT expects that existing generation will only reliably operate for one hour during an extreme cold weather event. The information contained within Requirement R1 Part 1.2 is required to be requested by the Balancing Authorities in TOP-003 to make sure they have the most accurate unit performance information possible for their reliability analysis during the winter season. It is critical, especially if a Corrective Action Plan, extension request for a Corrective Action Plan, or a Generator Cold Weather Constraint declaration is in effect, that the Generator Owner keep Requirement R1 Part 1.2 information updated with those entities requiring said information. The 2024-03 DT did not add a notification Requirement to EOP-012-3 as TOP-003 and IRO-010 obligate the applicable entities (Balancing Authority, Reliability Coordinator, and Transmission Operator) to have "*Provisions for notification of BES generating unit(s) during local*

forecasted cold weather to include" Requirement R1 Part 1.2 information. Balancing Authority(ies), Reliability Coordinators, and Transmission Operators should ensure complete coverage and timeliness of Requirement R1 Part 1.2 data submission within their data specifications.

It is recognized that the determination of a single unit minimum temperature is of limited value if applied without consideration of the other ambient conditions under which it was determined, that is, wind and precipitation. Consideration of wind and precipitation, along with the minimum temperature, provides a greater understanding of the potential generating unit capability for cold weather resource planning. The Standard requires that the GO include wind and precipitation data with their generating unit minimum temperature data when the data is available. The impact of deviations from this known temperature/wind/precipitation stated point are expected to be evaluated qualitatively. For example, if the historical minimum temperature occurred at low wind and dry conditions, and actual future cold weather event expected conditions are high winds with precipitation, planning personnel will recognize that a specific unit may not achieve the minimum temperature and can arrange for additional resources. The opposite also applies, i.e., if a design minimum temperature assumes some level of wind and precipitation and actual cold weather expectations are for low wind and dry conditions, planning personnel will recognize that there is increased likelihood that a generation resource may continue to be available below its minimum temperature. If no information about wind or precipitation is known, wind and precipitation are assumed to be zero at the minimum temperature until further information is obtained. The 2024-03 DT did provide updated language within the "Defined Terms" section of this Technical Rationale document to capture concerns regarding ECWT data availability.

Rationale for Requirement R2

The Joint Inquiry Report Key Recommendation 1f referenced recommendation 12 of the 2011 report8 suggesting that consideration should be given to designing all new generation plants and designing modifications to existing plants (unless committed solely for summer peaking purposes) to be able to perform at the lowest recorded ambient temperature for the nearest location for which historical weather data is available.

The 2021-07 DT believed and 2024-03 DT believes that there needs to be allowances made for units that are in the development process, and for which the design phase may have already commenced. The 2021-07 DT recommended this requirement apply to generation going into service three (3) years after the effective date of EOP-012-1 (i.e., October 1, 2027, based on an effective date of October 1, 2024). The 2024-03 DT edited Requirement R2 in response to the June 2024 Order Paragraph 72 to create differentiation among units based on when the ECWT definition became effective (February 16, 2023). The ECWT definition date was selected as it is a specific point in time where Generator Owners had clear direction for design implications as well as being unambiguous and auditable. Upon receiving feedback on that date, the 2024-03 DT determined that June 29, 2023 was a more appropriate brightline. This was the date where clearer direction was provided to the industry based on FERC decision. In addition, based on the Standard language and Implementation Plans of EOP-012-1 , April 1, 2028 was selected as a date to complete any Corrective Action Plans. The initial Implementation Plan of EOP-012-1 was slated to be

effective 18 months after the effective date of the applicable governmental authority's order approving the Standard. The DT understanding of the material resulted in allowing a period of time, similar in length, to a unit not meeting their ECWT because of design timing not significantly beyond the original planned date of October 1, 2027. EOP-012-1 original language was based on the effective date of the requirement. In this case, Requirement R2 was effective 42 months after the effective date of the Standard. The FERC and DT expectation would be that units are prepared for operations at their ECWT (or below) by commercial operation for units in the near future and beyond (but no later than April 1, 2028.) Note that the date for Canadian entities may need adjustment by the appropriate governmental authority and so a footnote was added to allow that to occur. The changes proposed recognize the potential conditions that exist in terms of generators under consideration or construction but removes the means of achieving compliance through a Corrective Action Plan for units establishing their design criteria on or after June 29, 2023. Allowances for Corrective Action Plans to achieve the required design criteria were maintained as a means of compliance, but only for units which established design criteria prior to June 29, 2023. Additionally, the 2024-03 DT identified that Generator Owners may need to declare a Generator Cold Weather Constraint for units that commit to design criteria on or after the June 29, 2023 date under certain circumstances. Generation that begins commercial operation before October 1, 2027 would be subject to Requirement R3.

GOs with generating units that enter commercial operation on or after October 1, 2027 that contractually committed to design criteria before the ECWT definition approval date (June 29, 2023) and cannot operate for 12 continuous hours at the ECWT taking into account a concurrent twenty (20) mph wind speed shall have completed a Corrective Action Plan by April 1, 2028. It is recognized that Generator Cold Weather Constraints may exist that prevent a new generating unit(s) from being capable of 12 continuous hours of operation at their identified ECWT.

GOs with generating units that enter commercial operation on or after October 1, 2027 that contractually committed to design criteria on or after the ECWT definition approval date (June 29, 2023) that are not able to comply with Requirement R2 would be required to declare a Generator Cold Weather Constraint in accordance with Requirement R8.

The 2021-07 DT chose 12 hours of continuous operation because it is a typical length of the nighttime in winter in most regions of the US and Canada and typically include the hours with the coldest experienced temperatures. The 2021-07 DT was of the opinion that tying the requirement to the 12-hour period would provide a reasonable level of reliability during a cold weather event. The 2021-07 DT chose a concurrent sustained 20 mph wind speed after an evaluation using the wind chill formula developed by the NWS in the United States. Though wind chill temperature is not an exact science, it is widely understood to reflect the **non-linear increased rate of convective heat loss due to air moving at different velocities**. Commonly available charts show wind chill temperatures as a function of actual air temperature at various wind speeds. Approximately 2/3 of the wind chill temperature drop between 0–60 mph is achieved at 20 mph. Using the NWS chart, this holds true for still air temperatures starting at 40ºF and dropping in 20-degree increments to -40°F. Further, 20 mph is a wind speed commonly experienced across the ERO and yet appropriately higher than the approximate average wind speeds in the United States and Canada, 6-12 mph and 8-11 mph respectively. Generator Owners should consider that wind

concurrent with cold temperatures will decrease the amount of time for a unit's equipment (e.g., sensing lines) to reach the ambient temperature. While this may not be readily apparent in all cases, operational history of operating at a certain temperature may not equate (in terms of capability or duration of operation) to operating at that same temperature with a 20 mph (32 km/h) wind speed. Providing freeze protection measures, such as tarps or temporary wind block structures, may support the ability to operate longer during extreme cold weather. Each of these three probabilistically infrequent conditions (the ECWT, a steady 20 mph (32 km/h) wind, and a duration of 12 continuous hours at these conditions) is in and of itself conservative. When they have their effects combined, it results in a requirement that will significantly contribute to BES reliability during extreme cold weather conditions.

Rationale for Requirement R3

The 2021-07 Drafting Team created a requirement for existing generating units, as defined in Requirement R3, to be able to operate at their ECWT. Many existing generating units have already demonstrated this capability. An early FERC order on EOP-012-1 rejected a one-hour timing requirement, consequently the 2021-07 DT chose to forego any specific time requirement in Requirement R3. If a generating unit cannot meet the requirements of Requirement R3, it is required to develop a CAP to add new freeze protection measures or modify existing freeze protection measures to be capable of operations at the ECWT (as calculated in Requirement 1).

Rationale for Requirement R4

General Considerations

Requirement R4 requires GOs to develop and maintain cold weather preparedness plans for their unit(s) and describes the information and documentation required in such plans. It is an expansion of the cold weather preparedness plan required under Requirement R7 of EOP-011-2 and is intended to be used and reviewed regularly by the GO. Originally, Requirement R4 Part 4.5 required the GO to annually inspect and perform necessary maintenance of freeze protection measures. The 2024-03 DT added some clarifying language to ensure that annual inspection and maintenance of freeze protection measures is applied specifically to Generator Cold Weather Critical Components. While other freeze protection measures may be applied to equipment by the Generator Owner, the freeze protection measures included in the cold weather preparedness plan with annual inspections and maintenance are expected to be those applied to Generator Cold Weather Critical Components. Working in concert with other parts of EOP-012-3, including but not limited to Requirements R1, R5, R6, and R7, the substantive elements of the cold weather preparedness plan will be subject to review requirements, updated as necessary, and the responsible party (GO or GOP) is required to annually train personnel on the cold weather preparedness plan requirements.

Requirement R4 Part 4.1

In Requirement R4 Part 4.1, the GO is required to include in the cold weather preparedness plan the lowest ECWT, as calculated pursuant to Requirement R1, for each unit using reliable source(s) of data. The

2021-07 DT believed that the GO is in the best position to select the most representative weather information relative to its generating unit. The cold weather preparedness plan will be updated if a new lower ECWT is calculated under the Requirement R1 periodic review language.

Requirement R4 Part 4.2

Requirement R4 Part 4.2 is intended to capture, within the cold weather preparedness plan, the information being developed pursuant to Requirement R1 Part 1.2, which is carried over from the previously approved EOP-011 Standard and requires the GO to document several cold weather performance parameters for the unit. This information is valuable, and in some cases, must be shared with other entities consistent with the data specification requirements contained in TOP-003 and IRO-010. A requirement for the GO to document this information within the cold weather preparedness plan ensures the information is readily available and documented when the GO responds to a data specification. It should be noted that if a Corrective Action Plan extension request is approved, the underlying generator cold weather data, as called out in Requirement R1 Part 1.2, should be correctly identified by the Generator Owner and provided to the Reliability Coordinators, Balancing Authorities, and Transmission Operators as requested. The June 2024 Order mentions this in Paragraph 3. The 2024-03 DT believes that the data specification Reliability Standards applicable to Reliability Coordinators, Balancing Authorities, and Transmission Operators (e.g., IRO-010 and TOP-003) require the entities to request the information and the GO is therefore obligated to provide the most current version of the relevant information within a Corrective Action Plan. The 2024-03 DT did not believe a notification Requirement was needed in EOP-012-3 in addition to those already existing in the data specification Reliability Standards. The 2024-03 DT encourages parties to work together to ensure the most accurate and up-to-date information is provided, especially when conditions increase risk to reliable operations. See the Technical Rationale for Requirement R1 for substantive rationale regarding the operating limitations and generating unit minimum temperatures documented in the cold weather preparedness plan.

Requirement R4 Part 4.3

In Requirement R4 Part 4.3, the GO identifies the Generator Cold Weather Critical Components to help inform their decision on where to implement appropriate freeze protection measures. The NERC *Reliability Guideline, Generating Unit Winter Weather Readiness – Current Industry Practices*[10], presents a suggested list of components that GOs may choose to utilize when developing their own Generator Cold Weather Critical Component inventory. The GO shall develop and maintain a list of Generator Cold Weather Critical Components for each unit.

Requirement R4 Part 4.4

Requirement R4 Part 4.4 requires GOs to document the freeze protection measures implemented on Generator Cold Weather Critical Components. These freeze protection measures should include those to reduce the cooling effects of wind. Requirement R4 does not require GOs to install new freeze protection measures to reduce the cooling effects of wind, but rather to identify freeze protection measures for Generator Cold Weather Critical Components that will protect against heat loss and the effect of freezing precipitation, where applicable, and document those measures (e.g., water-resistant insulation,

protective shielding, insulated boxes, etc.). These measures could include temporary measures as well, such as wind breaks, but there is no expectation for entities to list all climate-controlled areas as freeze protection measures. Specifically, the freeze protection measures applied to Generator Cold Weather Critical Components must be captured in the cold weather preparedness plan.

Requirement R4 Part 4.5

Requirement R4 Part 4.5 is largely carried over from the previously approved EOP-011 Standard and requires annual inspection and maintenance of the freeze protection measures applied to Generator Cold Weather Critical Components identified in the cold weather preparedness plan. The 2024-03 DT added clarifying language to emphasize the need to effectively mitigate risk on the Generator Cold Weather Critical Components. This Requirement ensures these freeze protection measures will be ready and serviceable when needed.

Rationale for Requirement R5

The 2024-03 DT noted that there could be a combination of operations and maintenance personnel that require training, so minor adjustments were made to that extent. Additionally, the personnel may not be physically located at the generator site depending on how an entity implements their cold weather preparedness plan(s).

Rationale for Requirement R6

Key Recommendation 1d: To require Generator Owners that experience outages, failures to start, or derates due to freezing to review the generating unit's outage, failure to start, or derate and develop and implement a corrective action plan (CAP) for the identified equipment and evaluate whether the CAP applies to similar equipment for its other generating units. Based on the evaluation, the Generator Owner will either revise its cold weather preparedness plan to apply the CAP to the similar equipment or explain in a declaration (a) why no revisions to the cold weather preparedness plan are appropriate, and (b) that no further corrective actions will be taken. The standard drafting team should specify the specific timing for the CAP to be developed and implemented after the outage, derate, or failure to start, but the CAP should be developed as quickly as possible and be completed by no later than the beginning of the next winter season.

The Key Recommendation from the Joint Inquiry Report recommended a Reliability Standard that requires GOs to develop a Corrective Action Plan for generating units that experience outages, failures to starts, or derates due to freezing. The Joint Inquiry Report identifies that most of the outages and derates in the February 2021 event were due to freezing of instrumentation, transmitters, sensing lines, or wind turbine blades (p 166 in the Joint Inquiry Report). As such, the 2021-07 DT followed the Joint Inquiry Report recommendation to require a Corrective Action Plan when the apparent cause of the event is freezing. The 2021-07 DT developed parameters around these events to clarify a reasonable baseline of what level of derate qualified as an event and provide additional language to identify what constitutes a start-up

failure. With the additional clarifications, the 2021-07 DT determined that the Reliability Standard would benefit from a defined term, to clearly and efficiently state what constitutes an event. The result was a defined term, Generator Cold Weather Reliability Event, that describes the circumstances for which a Corrective Action Plan is required (i.e., when a freezing event affects the equipment within the control of the GO). The defined term made the Reliability Standard easier to understand and implement by providing clear and reasonable factors to determine whether the impact of an event requires mitigation. However, because of the June 2024 Order, the 2024-03 DT updated Requirement R6 to provide clearer timeline obligations for those units that suffer a Cold Weather Reliability Event. In general, the 2024-03 DT understands that if a Generator Cold Weather Reliability Event occurs, Generator Owners will remediate the issue as soon as possible.

General Considerations for All Corrective Action Plans

To simplify the proposed requirements related to creating a Corrective Action Plan, the 2021-07 DT used the NERC Definition of a Corrective Action Plan. The Corrective Action Plan definition reads "A list of actions and an associated timetable for implementation to remedy a specific problem." As written, the definition requires two parts for a document to qualify as a Corrective Action Plan, i.e., a list of items to be addressed and a timeline for completion. A Corrective Action Plan without both a list of actions and the timeline to implement is not complete. The 2024-03 DT provided additional language for Corrective Action Plans to clarify expectations for those Corrective Action Plans created as a result of a Generator Cold Weather Reliability Event and other Corrective Action Plans referenced throughout the Requirement language. The resulting language kept the underlying structure developed during previous Projects but clarified and added information as needed to meet the June 2024 Order.

The Corrective Action Plan requirement applies to Generator Cold Weather Reliability Events as well as other instances of required actions to support reliable operations within the EOP-012-3 Standard Requirements. It should be noted that nothing in this standard prevents a GO from taking its own corrective actions resulting from events that do not meet the criteria of a Generator Cold Weather Reliability Event. Startup failure criteria were based on the GADS definition with the removal of "following an outage or reserve shutdown", since the definition of reserve shutdown is different in GADS than it is in some of the Regional Transmission Organizations (RTOs).

Requirement R6 requires the GO to develop, implement, and complete a Corrective Action Plan prior to the first day of December following a Generator Cold Weather Reliability Event. Note that the 2024-03 DT considered early occurrences (e.g., October or November) of Generator Cold Weather Reliability Events and provided a footnote to allow remedial activities to be completed by December 1 of the following calendar year. The December 1 date was chosen based on the FERC directives and the urgency stated within the June 2024 Order regarding this risk. This timeframe was maintained by the 2024-03 DT to allow GOs to review multiple events holistically following a winter season, if that scenario occurs, and create one Corrective Action Plan for components with common failure causes. Care should be taken when developing a multi-unit or multi-event Corrective Action Plan to ensure it meets the Corrective Action Plan criteria for each unit (e.g., actions and timetables may be different.)

The 2021-07 DT determined that Corrective Action Plans would be required for any freezing event that occurs at temperatures at or above the site's ECWT in accordance with the definition of a Generator Cold Weather Reliability Event. Using the site's ECWT as the threshold, as opposed to the generator unit minimum temperature as determined by the GO, achieves the following:

- Provides a consistent basis for the temperature at which Corrective Action Plans are required for all GOs
- Provides a consistent basis for when Corrective Action Plans are required for all generation types
- Provides a consistent basis for when Corrective Action Plans are required regardless of the level of effort that GOs may have applied to-date winterizing their generators such that they can operate to the ECWT that their sites will reasonably experience
- Removes any incentive (perceived or real) to not further winterize GOs sites to meet the ECWT at the GO site by not providing a window where one site might not be subject to the Corrective Action Plans requirement while sites in the same vicinity experiencing the same temperatures are subject to this requirement
- Removes any disincentive for GOs to design the units to operate well below the ECWT for a site by not requiring them to perform Corrective Action Plans while sites in the same vicinity experiencing the same temperatures are subject to this requirement

The 2024-03 DT provided clarifying language to have Corrective Action Plans developed in response to Generator Cold Weather Reliability Events completed by the first day of December of the winter season following the Generator Cold Weather Reliability Event. Allowances for events which occur early winter season, which varies across the North American continent, were provided with the expectation that more transient fixes occurring after a Generator Cold Weather Reliability Event would be applied quickly but allowing a reasonable time horizon for compliance with this Requirement. A Corrective Action Plan triggered by a Generator Cold Weather Reliability Event and for which the apparent cause is the failure of relatively simple existing piece of freeze protection equipment, the scope of the Corrective Action Plan may be documented after the fact. Such prompt repairs may be completed before creation of the Corrective Action Plan, and the GO may complete the implementation of the Corrective Action Plan simply by evaluating the requirements of R6 and documenting how and when the repair work was completed. An example of this circumstance would be a freezing event caused by a single heat trace circuit failure which would have been sufficient to prevent the event had it not failed. The June 2024 Order also directed changes affecting the application of a Generator Cold Weather Reliability Event Corrective Action Plans to other units within a Generator Owner's fleet. The 2024-03 DT established a 12 calendar month window from the time of the originating Generator Cold Weather Reliability Event to develop or update such a plan and a 24-calendar month window (initiated on the date of the Generator Cold Weather Reliability Event) to implement it. This timeframe allows Generator Owners with larger fleets to accommodate any required changes. Considering a Corrective Action Plan extension may be requested, the DT felt that 24 calendar months was sufficient time noting that even large fleets may not have large numbers of units suffering a possible Generator Cold Weather Reliability Event with a similar freeze protection measure. Entities should evaluate the issue with the freeze protection measure that

may have initiated the Generator Cold Weather Reliability Event to see if the maintenance and inspection efforts need to be adjusted (at the unit that suffered the Generator Cold Weather Reliability Event as well as at other similar units with similar freeze protection measures applied to Generator Cold Weather Critical Component(s)).

The existence of a Corrective Action Plan should not discourage the Generator Owner from applying any other actions necessary and feasible to prepare a unit to perform at extreme cold weather temperatures during the Corrective Action Plan implementation period.

The 2024-03 DT also created language that allows for Corrective Action Plan extension requests using the NERC Process. ERO Enterprise staff developed the NERC Process that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule). While TPL-007 has not been utilized extensively, the NERC Process is flexible enough to manage the expected submittals. The DT is not in control of updates to the process but the NERC staff have been engaged and responsive to industry concerns noted during the Standard development timeline. The NERC Process will allow a thorough review in a timely manner for any Corrective Action Plan extension requests including those that go beyond the 24 or 48 calendar month timetables. While there may be actions impacting the implementation and completion of Corrective Action Plans beyond the control of Generator Owners (e.g., supply chain issues), the Generator Owners should accelerate completion of corrective actions as much as possible to support reliable operations.

The 2024-03 DT updated language regarding Generator Cold Weather Constraints to clarify expectations. Please review Requirements R8 and R9 and Attachment 1 for further discussions of Generator Cold Weather Constraints.

Rationale for Requirement R7

In EOP-012-2, R7 was expanded from EOP-012-1 to provide additional definition on the requirements to implement a Corrective Action Plan, and to meet the direction for this requirement set by the February 2023 FERC Order. One such direction was to define expectations on implementation timelines for Corrective Action Plans. Under EOP-012-2 R7, Corrective Action Plans were divided into two categories: 1) those which address existing freeze protection measure(s), and 2) those which require new equipment or freeze protection measure(s). The former category required completion of the Corrective Action Plan to remedy the cause(s) within 24 months, and the latter required completion of the Corrective Action Plan within 48 months. The 2021-07 DT modeled this timeline structure after similar Corrective Action Plan implementation requirements in TPL-007. These are maximum durations and entities are expected to work diligently to correct issues and take prompt actions to mitigate future issues as soon as practical. At the same time, the 2021-07 DT recognized that the following time-consuming activities make the 24 and 48 calendar months maximum timelines reasonable: scoping applicability to similar units, freeze protection engineering and design, project development, budgeting processes, material supply lead times, outage scheduling, skilled labor availability, and startup/commissioning. However, the June 2024 Order established directives to clarify timelines and responsibilities associated with Corrective Action Plans. The

2024-03 DT chose to specifically remove Corrective Action Plan obligations for Generator Cold Weather Reliability Events and place those in Requirement R6. For Requirement 7, the 2024-03 DT provided clarifying language regarding existing and new freeze protection measures and the associated completion timelines. Language was provided for Corrective Action Plans that may include changes to existing freeze protection measures and addition of new freeze protection measures to help clarify expectations for completing the corrective actions. Entities are expected to work diligently to correct issues and take prompt actions to mitigate future recurrence. The 2024-03 DT updated Parts 7.1.3. and 7.1.4 for completeness to ensure updates would be made to document needed changes to the cold weather preparedness plan(s) to eliminate recurrence of issue(s) identified in the Corrective Action Plan. In clarifying these timeframes, the 2024-03 DT considered the FERC directives.

Within the revised Requirement R7, the GO is required to implement the Corrective Action Plan within a timetable defined by the GO in the Corrective Action Plan but limited by maximum durations in Part 7.1. If the GO is unable to complete the Corrective Action Plan within the time limits in Part 7.1, or the corrective action(s) change, the GO is required to update the Corrective Action Plan with justification. GOs that are unable to complete the Corrective Action Plan due to a Generator Cold Weather Constraint are required under Part 7.3 to create a declaration of the Generator Cold Weather Constraint which shall be provided to the Compliance Enforcement Authority per Requirement R8. Further requirements for the Generator Cold Weather Constraints are provided under Requirements R8 and R9.

The 2024-03 DT also created language that allows for Corrective Action Plan extension requests using the NERC Process. ERO Enterprise staff developed the NERC Process that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule). The NERC Process will allow a thorough review in a timely manner for any Corrective Action Plan extension requests including those that go beyond the 24 or 48 calendar months. The 2024-03 DT utilized the precedent set by TPL-007 to ensure the unique circumstances of each request will be considered while also avoiding potential compliance burdens which may not have a corresponding reliability benefit (e.g. specific timelines for submission and approval of extension requests). While there may be actions impacting the implementation and completion of Corrective Action Plans beyond the control of Generator Owners (e.g., supply chain issues), the Generator Owners should accelerate completion of corrective actions as much as possible to support reliable operations. It is expected that extension requests will be limited in nature. Generator Owners will have to provide clear justifications with supporting materials within the extension request. Due diligence in ordering equipment, obtaining permits, etc., will be considered as part of the determination of whether a particular set of facts constitute circumstances beyond the control of the entity. Denials of extension requests will be minimized if Generator Owners work diligently to correct issues and take prompt actions. Denial of an extension means the initial timelines for corrective actions must be met.

The 2024-03 DT updated language regarding Generator Cold Weather Constraints to clarify expectations. Please review Requirements R8 and R9 for further discussions of Generator Cold Weather Constraints.

If one or more actions within a Corrective Action Plan fall under a Generator Cold Weather Constraint declaration, it is the intent of the DT that only those constraint affected actions would not be

implemented as part of the Corrective Action Plan. The remaining corrective actions should be implemented per the timelines provided unless dependent upon the corrective action triggering the Generator Cold Weather Constraint declaration.

Rationale for Requirement R8

In the February 2023 FERC Order, the Commission expressed concern that a GO may make a Generator Cold Weather Constraint declaration without informing planning and operational entities (e.g., the Balancing Authority) that are expecting the reliable operation of the generating unit to its ECWT. An additional concern was that the Generator Cold Weather Constraint declarations may be used by a functional entity as an opt-out of compliance with requirements set forth in the standards or in a corrective action plan. To mitigate the concern, the Commission directed NERC to work with Commission staff and submit a data collection and assessment plan that contains information related to GO constraint declarations and explanations thereof. The 2021-07 DT expected that ERO Enterprise compliance staff will be responsible for reviewing declared Generator Cold Weather Constraints and assessing compliance with the Generator Cold Weather Constraint definition criteria in accordance with established processes. The June 2024 Order directives included more direct language that required NERC to receive, review, evaluate, and confirm the validity of each Generator Cold Weather Constraint in a timely manner. Additionally, the June 2024 Order directives required an increase in the frequency of reviews of Generator Cold Weather Constraints. If a Corrective Action Plan extension request is denied by the CEA, then the GO may request a joint CEA/NERC review of the denial.

The 2024-03 DT updated Requirement R8 to require the GO to submit, to the Compliance Enforcement Authority, a Generator Cold Weather Constraint in accordance with Attachment 1 under specific timelines. The ERO Enterprise staff have developed the Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule) as a foundation for the Generator Cold Weather Constraint process. The NERC Process will allow a thorough review in a timely manner for any Generator Cold Weather Constraint submitted. The 2024-03 DT created Attachment 1 to provide clear expectations on Generator Cold Weather Constraint conditions. Attachment 1 contains some known Generator Cold Weather Constraint conditions as well as examples of other case-by-case Generator Cold Weather Constraint conditions that may also be considered valid. To be clear, all Generator Cold weather Constraints declarations require submittal per the NERC Process. The 2024-03 DT could not create an exhaustive list of Generator Cold Weather Constraint conditions but provided language that allows professional judgement to be utilized. The 2024-03 DT believes the NERC Process in conjunction with Requirement R8 and Attachment 1 effectively meets the FERC directive regarding receiving, reviewing, evaluating, and confirming the validity of Generator Cold Weather Constraints.

Initially EOP-012-1 required an annual review of Generator Cold Weather Constraints. That frequency of reviews was subsequently changed to five years in EOP-012-2. The June 2024 Order directed that the review frequency be increased from the five-year periodicity. While Generator Owners should perform a

review and update any constraint declarations as needed, the 2024-03 DT has developed language requiring a review of validated Generator Cold Weather Constraints every 36 calendar months.

The 2021-07 DT believed that Generator Cold Weather Constraint declarations would be the exception, but it is clear to the 2024-03 DT that certain conditions may exist (based on general weather patterns) that will increase the amount of Generator Cold Weather Constraint declarations and subsequent submittals. In anticipation of that scenario, and following the June 2024 Order, the 2024-03 DT considers the NERC Process a valuable tool to capture data that may help future understanding of the effectiveness of the ECWT. The February 2023 FERC Order and subsequent NERC filing require the collection of data to evaluate the effectiveness of the EOP-12-3 standard.

Updated Generator Cold Weather Constraint declarations would also require an update to the operating limitations provided via data specifications to the entities overseeing reliability (e.g., Balancing Authority, Transmission Operator, or Reliability Coordinator). In this manner, information relevant to valid Generator Cold Weather Constraint declarations are made available to the planning and operational entities pursuant to their data collection authority contained in TOP-003 and IRO-010.

Rationale for Requirement R9

Based on multiple comments regarding Requirement R8 and the FERC directive regarding periodicity of reviews, the 2024-03 DT pulled this Requirement R8 language out as a separate new Requirement R9. There were multiple concerns raised about the 24 calendar month periodicity and the 2024-03 DT chose to extend it to 36 calendar months. CIP-014, a Reliability Standard addressing another significant risk, is proposing a review every 36 calendar months. Based on information shared at the Technical Conference held on November 12, 2024, changes to some technologies that may affect Generator Cold Weather Constraints may take a significant amount of time (well in excess of 36 months) to become available. By shortening from the five calendar years, the 36 calendar month timeline provides a reasonable approach to meeting the Commission's directives without creating undue administrative burden to periodically monitor if Generator Cold Weather Constraints remain valid or if new technologies have become available that effectively obviate the originally validated constraint.

Attachment 1

The 2024-03 DT chose to utilize a limited and discrete list of known Generator Cold Weather Constraints as well as a description of other case-by-case situational descriptions that may constitute Generator Cold Weather Constraints. All declared Generator Cold Weather Constraints must be confirmed as valid by the Compliance Enforcement Authority. Nevertheless, the limited and discrete list is intended to describe specific circumstances that, if met, would have a very high probability of being approved. The 2024-03 DT discussed providing clarity with examples (as noted by FERC Order Paragraph 47) knowing that additional instances or conditions that may be considered a Generator Cold Weather Constraint may exist.

Per the FERC Order, NERC staff is responsible to provide a process describing the receipt, evaluation, approval (as needed), and validation of Generator Cold Weather Constraints. This process is captured in the Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") document.

Once a declaration is approved by the CEA it is considered valid.

The 2024-03 DT is intentionally leaving room for additional instances of Generator Cold Weather Constraints to be presented as it would be impossible to foresee every potential set of circumstances that could possibly constitute a constraint. Furthermore, the 2024-03 DT wants to ensure that the Standard language supports the development and adoption of new freeze protection measures, practices, methods, or technologies while not immediately requiring that the new freeze protection measures, practices, methods, or technologies be implemented industry-wide. The 2024-03 DT encourages additional study and implementation of freeze protection measures to remove Generator Cold Weather Constraints, as appropriate, over time.

The 2024-03 DT updated the definition of Generator Cold Weather Constraints to provide clarity as directed by FERC. In addition to modifying the definition, the 2024-03 DT developed Attachment 1. Requirement R8 provides entities a clear understanding of what is expected when managing Generator Cold Weather Constraints and directly references use of Attachment 1. The list of known Generator Cold Weather Constraints focuses on technical issues or conditions that are widely understood to exist which may have limited or no freeze protection measures to implement. For example, the DT recognizes that some existing wind turbine towers were not constructed of materials that will meet lower ECWT values and therefore has established a Generator Cold Weather Constraint for those situations.

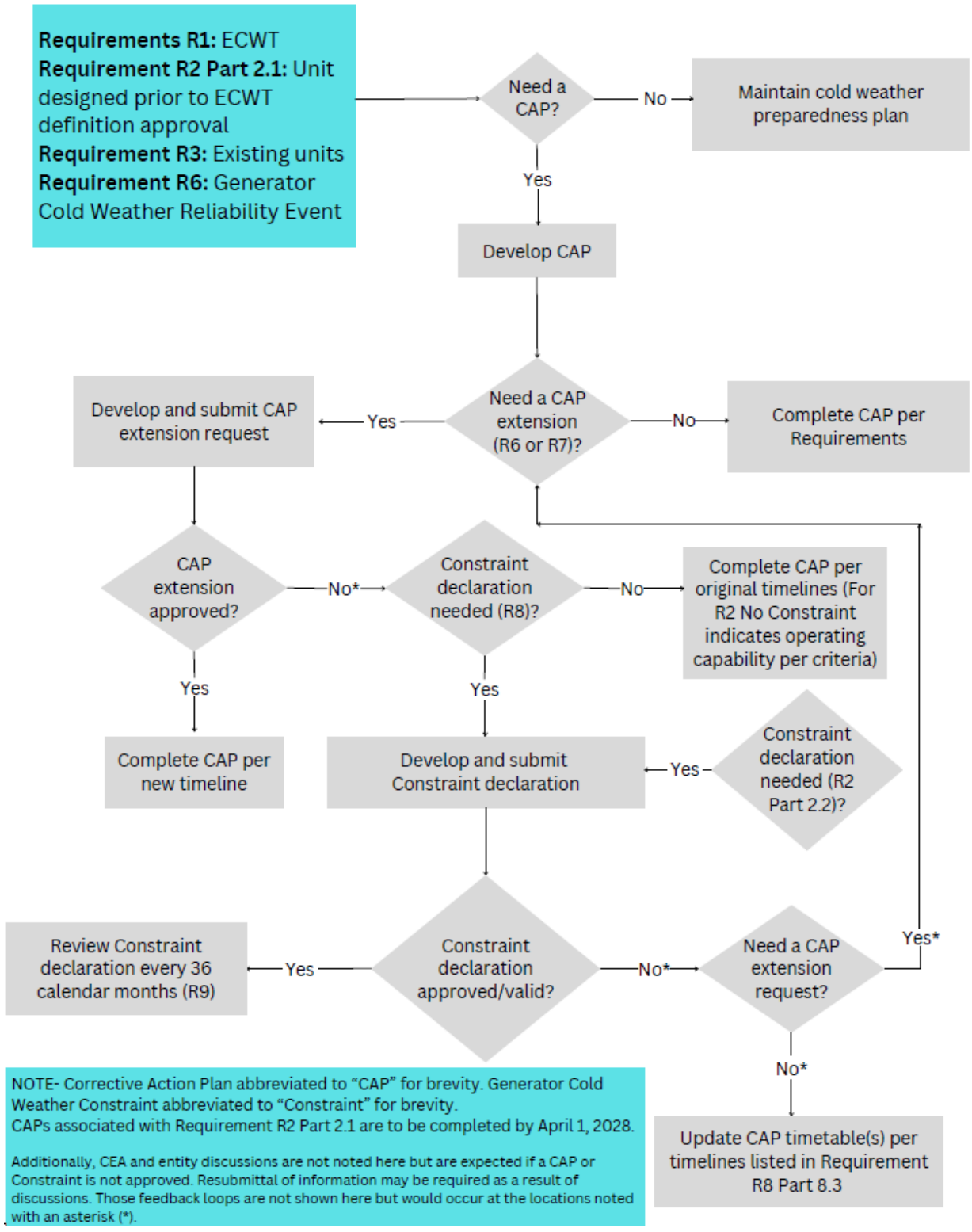
In addition, the DT recognized the need to balance potential adverse effects to the Bulk Power System reliability from implementing a freeze protection measure with benefits to the same is best done on a localized basis. Therefore the DT has selected a value of three precent, or another value supported by the appropriate functional entity, to mitigate such adverse effects.

Regardless of a Generator Cold Weather Constraint being of the "known" type, a Generator Owner is still required to submit "known Generator Cold Weather Constraints for approval. The case-by-case

determination section of Attachment 1 provides examples of conditions or issues that may constitute a valid Generator Cold Weather Constraint depending on the facts and circumstances presented by the Generator Owner. The language provided is meant to be objective, unambiguous, and auditable.

With all Generator Cold Weather Constraints, it is the responsibility of the Generator Owner to provide supporting materials to facilitate approval and validation of the Generator Cold Weather Constraint by the ERO Enterprise. As mentioned in the Requirement R8 Technical Rational discussion, the NERC Process was developed to support the FERC directives in the June 2024 Order. The 2024-03 DT believes the new definition of Generator Cold Weather Constraint, updated language throughout the Standard with emphasis on Requirement R8, and the contents of Attachment 1 provide significant clarity to industry on what is expected for Generator Cold Weather Constraints to be considered valid.

EOP-012-3 Process Flow Chart: Below is a graphical representation demonstrating the relationship between Requirements:



NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Technical Rationale ~~for~~

Project 2024-03 Revisions to EOP-012-2
Reliability Standard EOP-012-3 | December 2024
~~October 2024~~

EOP-012-3 – Extreme Cold Weather Preparedness and Operations

Introduction

This document explains the technical rationale and justification for the proposed Reliability Standard EOP-012-3. It provides stakeholders and the ERO Enterprise with an understanding of the technology and technical requirements in the Reliability Standard. This Technical Rationale and Justification for EOP-012-3 is not a Reliability Standard and should not be considered mandatory and enforceable.

Background

From February 8 through February 20, 2021, extreme cold weather and precipitation caused large numbers of generating units to experience outages, derates or failures to start, resulting in energy and transmission emergencies (referred to as the "Event"). The total Event firm load shed was the largest controlled firm load shed event in U.S. history and was the third largest in quantity of outaged megawatts (MW) of load after the August 2003 Northeast blackout and the August 1996 West Coast blackout. The Event was most severe from February 15 through February 18, 2021, and it contributed to power outages affecting millions of electricity customers throughout the regions of ERCOT, SPP, and MISO South. Additionally, the February 2021 event is the fourth cold weather event in the past 10 years, which jeopardized BPS reliability. A joint inquiry was conducted to discover reliability-related findings and develop recommendations from Federal Energy Regulatory Commission (FERC), NERC, and Regional Entity staff. The FERC, NERC, and Regional Entity Staff Report into the February 2021 Cold Weather Outages[1] ("Joint Inquiry Report") was published on November 16, 2021.

Project 2021-07 was a two-phase project to address the 10 sub-recommendations in Key Recommendation 1 of the Joint Inquiry Report for new or enhanced NERC Reliability Standards. Reliability Standard EOP-012-1 was originally developed to address Recommendations 1d, 1e, and 1f of the Joint Inquiry Report through new and enhanced requirements for generator preparedness for extreme cold weather conditions. Reliability Standard EOP-012-2 was revised to address Key Recommendations 1a, 1b, and 1c as well as the ~~-~~FERC directives in the February 2023 Order approving the Phase 1 standards EOP-

1 The February 2021 Cold Weather Outages in Texas and the South Central United States | FERC, NERC and Regional Entity Staff Report | Federal
Energy Regulatory Commission

011-3 and EOP-012-1.[2] Reliability Standard EOP-012-3 is being revised to address FERC directives in the June 2024 ~~order~~Order approving EOP-011-4 and EOP-012-2[3].

Defined Terms

Previous DTs developed five defined terms to be added to the NERC Glossary of Terms to make the requirements easier to ~~read and~~ understand. Project 2024-03 updated one term (Generator Cold Weather Constraint) to meet the FERC directives in the June 2024 Order and provided additional language to clarify issues noted during the development of EOP-012-3, 2024 Small Group Advisory Session(s), and input received during outreach with industry. These five terms are:

Extreme Cold Weather Temperature

The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 1/1/2000 through the date the temperature is calculated.

The definition of Extreme Cold Weather Temperature (ECWT) was developed by the 2021-07 Drafting Team (DT) to provide clarity to the Generator Owner (GO) on determining what temperature triggers the requirement obligations. Each GO should select a reliable source of data from a recording location near the plant to determine their ECWT. Sources could include, for example, the National Weather Service (NWS) or National Oceanographic and Atmospheric Administration (NOAA) weather stations, Federal Aviation Administration (FAA) weather stations, or Environment and Climate Change Canada location for Canadian entities[4], etc. NOAA's National Centers for Environmental Information provides Climate Data Online (CDO) as a free resource that includes quality-controlled weather data and 30-year Climate Normals[5]. In general, GOs should use the location nearest the plant, but may select a further location if geographic or local climatic patterns make a further location more representative of the weather at the generating unit. GOs may use on-site weather stations if data, which reasonably matches reliable nearby off-site sources since January 1, 2000, is available. The starting period chosen by the 2021-07 DT to gather data to determine the lowest temperatures that occur near a facility is based on the completion of the modernization of the National Weather Service project known as MAR (Modernization and Associated Restructuring). This project was completed in the year 2000. In general, the National Weather Service modernization provides weather data to be available at most large airports. This will make it fairly accessible for companies to gather data and perform the required analysis. The December through February timeframe was selected to correspond to the meteorological winter, as defined by NOAA.[6]

2 *N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094 (2023) (FERC Order), *notice denying reh'g and providing for further consideration*, 183 FERC ¶ 62,034 (2023).

3 *N.AM.Elec.Reliability Corp.*, 187 FERC ¶ 61,204 (FERC Order)

4 ~~Environment and Climate Change Canada - Canada.ca~~ Environment and Climate Change Canada - Canada.ca

5 ~~https://www.ncei.noaa.gov/products/land-based-station/us-climate-normals~~ U.S. Climate Normals | National Centers for Environmental Information (NCEI) (noaa.gov)

6 ~~https://www.ncei.noaa.gov/news/meteorological-versus-astronomical-seasons~~Meteorological Versus Astronomical Seasons | News | National Centers for Environmental Information (NCEI) (noaa.gov) ~~5 Report (nerc.com)~~

The 2021-07 DT discussed methods for determining an ECWT with engineering design professionals, and it was determined that it is typical engineering practice to use a statistical approach to determine the design temperature when implementing generation facility freeze protection measures. The 2021-07 DT determined that only winter temperature values (i.e. between December and February) shall be used for the statistical approach and based on analysis of multiple weather data sites, it was determined that by using the lowest 0.2 percentile, there will be sufficient data points to ensure that a single hour at a temperature that may not be accurate, or may be a statistical anomaly, doesn't result in an overly conservative design or preclude the ability of the GO to use historical operating data to prove compliance to the requirements. The 2021-07 DT selected the 0.2 percentile of winter month temperatures since 1/1/2000 to identify a temperature which has been rarely surpassed, but which allows some margin for a GO to have previously demonstrated successful operation. The 2021-07 DT considered using the lowest recorded hourly ambient temperature, but upon further review of the historical weather data and generally accepted design principles, determined that the statistical approach to setting the ECWT for a site's location was more reasonable.

The 2024-03 DT recognized comments and concerns raised during the 2024 Small Group Advisory Session on cold weather preparedness regarding application of the ECWT calculation if hourly temperature values were questionable. If complete data sets are not available (e.g., data is corrupt or missing) at a single weather station back to January 1, 2000, the GO should document the methodology they use to determine their ECWT, such as appending data from multiple weather stations or selecting a complete or partial data set from a weather station further away from the facility. The 2021-07 and 2024-03 DTs realized that a complete data set (i.e., all hours of every day of every year for the months of December, January, and February) may not be available due to a variety of technical reasons. To that point, the Generator Owner's approach in handling the missing/corrupt data should be documented in their methodology and available to Compliance Monitoring Enforcement Program (CMEP) staff as needed. ~~Please reference the Calculating Extreme Cold Weather Temperature document drafted by the 2021-07 DT and updated by the 2024-03 DT for an example of how to calculate the ECWT.~~ To accommodate concerns raised by industry, the 2024-03 DT felt additional clarification was needed to address missing data and set an expectation for entities to meet when reviewing the inputs to the ECWT calculations within Requirement R1. Entities should be able to explain the reasoning behind the substitution of missing or corrupt data points.

It has been noted that there will likely be the possibility of missing data utilized for the ECWT calculation. The 2024-03 DT discussed data completeness concerns and, after considering the likely variability in such hourly temperature data sets across North America, ultimately chose not to establish a requirement regarding the size of the data set necessary to support an accurate ECWT determination. The 2024-03 DT understands that the entity may very well have an overall approach to missing data versus a unit-by-unit approach. By the nature of the percentile function, significant data loss may not change the ECWT value. The key is where the data is missing in relationship to the ECWT determined value. Missing hourly temperature values above the ECWT has limited impact to the determination. However, missing hourly temperature values below the ECWT can impact the ECWT determination value. For example, the 0.2 percentile of 50,000 hourly values equates to 100 hourly values (in this case the lowest recorded hourly temperatures.) If there are missing hourly values that would have been included in the list of the lowest 100 hourly temperature values, those values should be explained

by the entity and may warrant further review. Missing data in the lowest 100 values effectively has the potential of moving the ECWT value higher but that is very dependent upon the data set. This simplified example is intended to demonstrate a principle; not establish a fixed number of lowest temperature values of concern. Any data set with missing or invalid hourly temperature values recorded during the coldest periods since January 1, 2000 should be carefully evaluated to assure that any adjustments utilized on those particular values are properly addressed in a transparent and logical way. Please reference the Calculating Extreme Cold Weather Temperature document drafted by the 2021-07 DT and updated by the 2024-03 DT for an example of how to calculate the ECWT[7].

Generator Cold Weather Critical Component

Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

The 2021-07 DT felt the best method to address where freeze protection measures should be implemented was to define a term which specifies a subset of components that may be susceptible to freezing and are critical to the operation of generating units. GOs should consider previous freeze-related issues experienced by the generating unit(s), as well as actions taken to mitigate those freeze-related issues, when establishing its list of Cold Weather Critical Components. The 2021-07 DT also felt it is appropriate to specifically exclude components that are not susceptible to freezing due to being inside heated buildings that maintain the interior temperature above freezing.

The 2021-07 DT's intent with regard to the language "that is under the Generator's Owner's control" was to clearly delineate that cold weather events external to the generation site such as loss of fuel supply or loss of auxiliary power to the site that resulted in a Generator Cold Weather Reliability Event (see definition below) would not be subject to this standard. Furthermore, ice buildup on transmission lines and/or high voltage lines between the generating station and point of interconnection with the Transmission Owner would not constitute a freezing condition in the context of this Standard, and therefore, these lines would not be considered a Generator Cold Weather Critical Component.

The 2021-07 DT's intent with the use of the phrase "permanent building" is to refer to a structure that is in place year ~~-~~round, shall accommodate personnel entry, and has a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit for the purpose of protecting components from freezing (e.g. heated container that protects inverter-based resources or battery energy systems). The 2024-03 DT recognized comments and concerns raised during the ~~2024 Small Group Advisory Session~~2024 Small Group Advisory Session on cold weather preparedness regarding heating of the "permanent building." The HVAC/heating system is not a freeze protection measure in terms of being

[7] Report (nerc.com)

included in the cold weather preparedness plan as it is not protecting a Generator Cold Weather Critical Component (per the definition) nor is it a Generator Cold Weather Critical Component. The 2024-03 DT expects the HVAC/heating system to be part of routine maintenance and monitoring to ensure that the heated building remains above 32 degrees Fahrenheit.

Fixed Fuel Supply Component

Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

The 2021-07 DT wanted to clarify the boundaries of responsibility for the GO as it relates to sites having fuel handling equipment within their control and responsibility to provide freeze protection. The intent of this definition is to clarify that mobile equipment is not part of this requirement, but permanent fixed equipment impacting fuel delivery needed for generation is included.

Generator Cold Weather Reliability Event

One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

<u>Key Recommendation 1d:</u> To require Generator Owners that experience outages, failures to start, or derates due to freezing to review the generating unit's outage, failure to start, or derate and develop and implement a corrective action plan (CAP) for the identified equipment, and evaluate whether the CAP applies to similar equipment for its other generating units. Based on the evaluation, the Generator Owner will either revise its cold weather preparedness plan to apply the CAP to the similar equipment, or explain in a declaration (a) why no revisions to the cold weather preparedness plan are appropriate, and (b) that no further corrective actions will be taken. The standard drafting team should specify the specific timing for the CAP to be developed and implemented after the outage, derate, or failure to start, but the CAP should be developed as quickly as possible, and be completed by no later than the beginning of the next winter season.

The Key Recommendation from the Joint Inquiry Report recommends a Reliability Standard that requires GOs to develop a Corrective Action Plan for generating units that experience outages, failures to starts, or derates due to freezing. The Joint Inquiry Report identifies that most of the outages and derates in the February 2021 event were due to freezing of instrumentation, transmitters, sensing lines, or wind turbine blades (p 166 in the Joint Inquiry Report). As such, the 2021-07 DT followed the Joint Inquiry Report recommendation to require a Corrective Action Plan when the apparent cause of the event is freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, or freezing rain) on equipment. The 2021-07 DT felt that it was important to clearly call out freezing precipitation as these events were included in the outages and derates that identified as freezing in the Joint Inquiry Report. Furthermore, Key Recommendation 1c of the report requires GOs to account for the effect of precipitation. The 2021-07 DT has developed parameters around these events to clarify a reasonable baseline of what level of derate qualifies as an event, and provide additional language to identify what constitutes a start-up failure. With the additional clarifications, the 2021-07 DT determined that the standard would benefit from a defined term, to clearly and efficiently state what constitutes an event. The result is a new defined term, Generator Cold Weather Reliability Event, that defines the circumstances for which a Corrective Action Plan is required (i.e., when a freezing event affects the equipment within the control of the GO). The defined term will make the standard easier to understand and implement by providing clear and reasonable factors to determine whether the impact of an event requires mitigation. The 2021-07 DT is using the definition of apparent as defined in the Webster's dictionary as "clear or manifest to the understanding".

Note that the 2024-03 DT provided additional language to alleviate concerns regarding the administrative nature of developing Corrective Action Plans specifically for similar noted issues occurring at one or more locations (e.g., freezing precipitation on wind turbines). Care should be taken if updating existing Corrective Action Plans for additional units especially in terms of effectively capturing the actions and timetables applicable to the additional units.

The Corrective Action Plan requirement applies to any forced outage due to freezing, regardless of duration. Derates, which are short lived (specified as four hours by the 2021-07 DT) or of small capacity impact (specified as less than 20 MW by the 2021-07 DT, which roughly corresponds with the threshold for Bulk Electric System (BES) impacting generation units), are excluded from the Corrective Action Plan requirement to limit the administrative burden to GOs for events that are minimally impacting to the BES. Also excluded are proactive operational actions to limit the potential of forced outages or derates. It should be noted that nothing in this standard prevents a GO from taking its own corrective actions resulting from such events. Startup failures for conventional generation are defined using the GADS definition with the removal of "following an outage or reserve shutdown", since ~~the definition of~~ reserve shutdown is ~~different~~defined differently by NERC in GADS than it is ~~in~~by some of the Regional Transmission Organizations (~~RTO's~~RTOs) and Independent System Operators (ISOs). From the GADS data reporting instructions, the startup period for each unit is determined by the operating company. It is unique for each unit and ~~depends~~may depend on the condition of the unit at the time of startup (cold, warm, or hot). A typical unit startup occurs in three phases: warm up, synchronization, and ramp up. NERC defines a startup period to begin with the command to start and end when the unit is synchronized. A startup failure begins when a problem, preventing the unit from synchronizing, occurs. The startup

failure ends when the unit is synchronized, another startup failure occurs, or the unit enters another permissible state.

The 2021-07 DT determined that Corrective Action Plans will be required for any freezing event that occurs at temperatures above the generator site's ECWT. By using the site's ECWT, as opposed to the generator unit minimum temperature as defined by the GO in Requirement R1 Part 1.2.2 as the threshold, this achieves the following:

- Provides a consistent basis for the temperature at which CAPS are required for all GOs
- Provides a consistent basis for when Corrective Action Plans are required for all generation types
- Provides a consistent basis for when Corrective Action Plans are required regardless of the level of effort that GOs may have applied to-date winterizing their generators such that they can operate to the ECWT that their sites will reasonably experience
- Removes any incentive (perceived or real) to not further winterize GOs generating sites to meet the ECWT at the GO site by not providing a window where one site might not be subject to the Corrective Action Plan requirement while sites in the same vicinity experiencing the same temperatures are subject to this requirement
- Removes any disincentive for GOs to design the units to operate well below the ECWT for a site by not requiring them to perform Corrective Action Plans while sites in the same vicinity experiencing the same temperatures are subject to this requirement

Generator Cold Weather Constraint

~~A~~*Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components* ~~.~~ *Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.*

The 2024-03 DT reviewed the material from the June 2024 ~~FERC~~ Order when determining how best to update the Generator Cold Weather Constraint definition. The 2024-03 DT relied upon industry and FERC guidance as a basis for updating the definition language and the process captured in Attachment 1 of EOP-012-3. The 2024-03 DT also ensured that constraint language would be fully captured within the Standard itself through Attachment 1.

The 2024-03 DT felt that an Attachment that included specific language further explaining Generator Cold Weather Constraints with discrete ~~pre-approved~~known Generator Cold Weather Constraints and other case-by-case Generator Cold Weather Constraints ~~requiring pre-approval~~ meets the FERC (and industry) expectations to provide unambiguous, objective, and auditable language. The 2024-03 DT discussed providing clarity with examples knowing that additional instances or conditions that may be considered a Generator Cold Weather Constraint may exist.

Per the FERC Order, NERC staff is responsible to provide a process describing the receipt, evaluation, approval (as needed), and validation of Generator Cold Weather Constraints. This process is captured in the ~~Generator Cold Weather CAP Extension and Constraint Process~~Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") document.

Attachment 1 contains a non-comprehensive list of ~~preapproved~~known Generator Cold Weather Constraints as well as a list of situations, circumstances, and criteria that may constitute a Generator Cold Weather Constraint~~ that a~~. The Generator Owner **must** submit all Generator Cold Weather Constraints to the CEA for approval, regardless of which category it might fall into.

Once a declaration is approved by the CEA, it is considered valid. It is the GO's responsibility to document, in the Generator Cold Weather Constraint declaration, the circumstances and reasons why the modification needed to address the freeze protection measure(s) is not being implemented. A Generator Cold Weather Constraint declaration, that no further corrective actions will be taken, is expected to be used sparingly.

The 2024-03 DT is intentionally leaving room for additional instances of Generator Cold Weather Constraints as it would be impossible to foresee every potential circumstance that could possibly necessitate a review of potential freeze protection technologies across the breadth of the US and Canada and the breadth of generating unit types and ages that fall under this Standard. Furthermore, the 2024-03 DT wants to ensure that the Standard language supports the adoption of new freeze protection measure practices, methods, or technologies while not immediately requiring a new freeze protection measure practice, method, or technology to be implemented industry-wide when a leading utility pilots a novel approach, as this would be a disincentive to utilities piloting new technologies. The 2024-03 DT encourages additional studying and implementation of freeze protection measures to remove Generator Cold Weather Constraints as appropriate over time.

In the June ~~27,~~ 2024~~, FERC~~ Order, there was a directive to change the frequency of Generator Cold Weather Constraint reviews to facilitate consideration of new freeze protection measure technologies to reduce the risk resulting from the need for a Generator Cold Weather Constraint. That change is ~~capture~~captured in Requirement ~~R8~~R9 discussed later in this Technical Rationale document.

Facilities

~~*4.1. Facilities:*~~

~~*4.1.1. Bulk Electric System (BES) generating units. For purposes of this standard, the term "generating unit" subject to these requirements refers to the following BES resources:*~~

~~*4.1.1.1. A BES generating resource identified in the BES definition, Inclusion I2 and I4;*~~
~~*or*~~

~~*4.1.1.2. A Blackstart Resource, identified in the BES definition, Inclusion I3.*~~

After reviewing this reference material and the efforts of the 2021-07 DT, the 2024-03 DT determined that EOP-012-3 should continue to apply to all Bulk Electric System (BES) generating units in order to ensure consistency in extreme cold weather preparedness. The Applicability section first defines "generating unit" as a BES resource. The NERC Glossary of Terms provides the foundation for what BES resources are included in the definition (see Inclusions I2 through I4). Additionally, Blackstart Resources are also specifically declared subject to the winterization requirements. Such Blackstart Resources, consistent with the NERC Glossary of Terms, are those units designated in the Transmission Operator's restoration plans. Proposed EOP-012-3 clarifies which Facilities and their Generator Cold Weather Critical Components are subject to implementing freeze protection measures through specific language in Requirements R2 and R3. The 2024-03 DT briefly discussed Generator Owner Category 2 Inverter-Based Resource (IBR) applicability to EOP-012-3 but it was noted the applicability is under review ~~per~~as part of the ~~Order 901 NERC~~Registration of IBR Work Plan so no changes were presented.

Rationale for Requirement R1

~~***R1.*** *At least once every five calendar years, each Generator Owner shall, for each of its applicable generating unit(s): [Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*~~

~~***1.1.*** *Calculate the Extreme Cold Weather Temperature for each of its applicable unit(s) and identify the calculation date and source of temperature data; and*~~

~~***1.1.1.*** *If the re-calculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan under Requirement R4 within six (6) calendar months of the recalculation. If new corrective actions are needed to provide the required operational capability under Requirement R2 or R3, the entity shall develop a Corrective Action Plan within 6 calendar months of the recalculation.*~~

~~***1.2.*** *Identify generating unit(s) cold weather data, to include:*~~

~~***1.2.1.*** *Generating unit(s) operating limitations in cold weather to include:*~~

~~***1.2.1.1.*** *Capability and availability;*~~

~~***1.2.1.2.*** *Fuel supply and inventory concerns;*~~

~~***1.2.1.3.*** *Start-up issues;*~~

~~***1.2.1.4.*** *Fuel switching capabilities; and*~~

~~***1.2.1.5.*** *Environmental constraints.*~~

~~***1.2.2.*** *Generating unit(s) minimum:*~~

- ~~*Design temperature and if available, the concurrent wind speed and precipitation;*~~
- ~~*Historical operating temperature at least one hour in duration, and if available, the concurrent wind speed and precipitation; or*~~
- ~~*Current cold weather performance temperature determined by an engineering analysis, which includes the concurrent wind speed and precipitation.*~~

The Project 2024-03's Technical Rationale language for Requirement R1 did not substantially change from 2021-07 DT language and, as such, use of DT below is referencing 2021-07 DT. Much of the criteria of R1 is carried over from the previously approved EOP-011 Standard and requires the GO to document several cold weather performance parameters for the unit. This information is valuable, and in some cases, must be shared with other entities. For Requirement R1 Part 1.1, the GO is required to calculate the Extreme Cold Weather Temperature (ECWT) for each unit using a reliable source of data (See the supporting

document "Calculating Extreme Cold Weather Temperature"). The DT believes that the GO is in the best position to select the most representative weather information relative to its generating unit. The ECWT will be updated if a new lower ECWT is determined under the periodic review requirement of R1. Defining the operating limitations in Requirement R1 Part 1.2.1 will make affected personnel more aware of unit capabilities and constraints as well as systems and practices that may be necessary to ensure reliability in cold weather, particularly when alternative fuels are involved. In addition, the unit minimum temperature identified in Requirement R1 Part 1.2.2 is used to demonstrate compliance with Requirement R3 for existing units. The DT chose one hour of historical operating data recognizing that there is extremely limited historical operating data available for a unit below their ECWT. This was not to infer that the DT expects that existing generation will only reliably operate for one hour during an extreme cold weather event. The information contained within Requirement R1 Part 1.2 is required to be requested by the Balancing Authorities in TOP-003 to make sure they have the most accurate unit performance information possible for their reliability analysis during the winter season. It is critical, especially if a Corrective Action Plan, extension request for a Corrective Action Plan, or a Generator Cold Weather Constraint declaration is in effect, that the Generator Owner keep Requirement R1 Part 1.2 information updated with those entities requiring said information. The 2024-03 DT did not add a notification Requirement to EOP-012-3 as TOP-003 and IRO-010 obligate the applicable entities (Balancing Authority, Reliability Coordinator, and Transmission Operator) to have "*Provisions for notification of BES generating unit(s) during local forecasted cold weather to include*" Requirement R1 Part 1.2 information. Balancing Authority(ies), Reliability Coordinators, and Transmission Operators should ensure complete coverage and timeliness of Requirement R1 Part 1.2 data submission within their data specifications.

It is recognized that the determination of a single unit minimum temperature is of limited value if applied without consideration of the other ambient conditions under which it was determined, that is, wind and precipitation. Consideration of wind and precipitation, along with the minimum temperature, provides a greater understanding of the potential generating unit capability for cold weather resource planning. The Standard requires that the GO include wind and precipitation data with their generating unit minimum temperature data when the data is available. The impact of deviations from this known temperature/wind/precipitation stated point are expected to be evaluated qualitatively. For example, if the historical minimum temperature occurred at low wind and dry conditions, and actual future cold weather event expected conditions are high winds with precipitation, planning personnel will recognize that a specific unit may not achieve the minimum temperature and can arrange for additional resources. The opposite also applies, i.e., if a design minimum temperature assumes some level of wind and precipitation and actual cold weather expectations are for low wind and dry conditions, planning personnel will recognize that there is increased likelihood that a generation resource may continue to be available below its minimum temperature. If no information about wind or precipitation is known, wind and precipitation are assumed to be zero at the minimum temperature until further information is obtained. The 2024-03 DT did provide updated language within the "Defined Terms" section of this Technical Rationale document to capture concerns regarding ECWT data availability.

Rationale for Requirement R2

~~**R2.** Applicable to generating units which begin commercial operation[8] on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[9] shall: [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]~~

~~**2.1** For generating units for which the Generator Owner first contractually committed to design criteria[10] relevant to this Requirement before February 16, 2023[11]: -~~

- ~~Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or~~
- ~~Have a Corrective Action Plan(s) in place (to include any applicable Generator Cold Weather Constraint(s) upon beginning commercial operation, to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours.~~

~~**2.2** For generating units for which the Generator Owner first contractually committed to design criteria[12] relevant to this Requirement on or after February 16, 2023[13]:~~

- ~~Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph wind speed for (i) a period of~~

~~[8] Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing.~~
~~[9] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.~~
~~[10] Such commitments would be demonstrated by signed contractual commitments, emailed correspondence agreeing to thermal design criteria, or other similar documented evidence.~~
~~[11] Or the date the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction.~~
~~[12] Such commitments would be demonstrated by signed contractual commitments, emailed correspondence agreeing to thermal design criteria, or other similar documented evidence.~~
~~[13] Or the date the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction.~~

~~*not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or*~~

~~*Document in a declaration, with justification, as applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.*~~

The Joint Inquiry Report Key Recommendation 1f referenced recommendation 12 of the 2011 report8 suggesting that consideration should be given to designing all new generation plants and designing modifications to existing plants (unless committed solely for summer peaking purposes) to be able to perform at the lowest recorded ambient temperature for the nearest location for which historical weather data is available.

The 2021-07 DT believed and 2024-03 DT believes that there needs to be allowances made for units that are in the development process, and for which the design phase may have already commenced. The 2021-07 DT recommended this requirement apply to generation going into service three (3) years after the effective date of EOP-012-1 (i.e., October 1, 2027, based on an effective date of October 1, 2024). The 2024-03 DT edited Requirement R2 in response to the June 2024 ~~FERC~~ Order Paragraph 72 to create differentiation among units based on when the ECWT definition became effective (February 16, 2023). The ECWT definition date was selected as it is a specific point in time where Generator Owners had clear direction for design implications as well as being unambiguous and auditable. Upon receiving feedback on that date, the 2024-03 DT determined that June 29, 2023 was a more appropriate brightline. This was the date where clearer direction was provided to the industry based on FERC decision. In addition, based on the Standard language and Implementation Plans of EOP-012-1 , April 1, 2028 was selected as a date to complete any Corrective Action Plans. The initial Implementation Plan of EOP-012-1 was slated to be effective 18 months after the effective date of the applicable governmental authority's order approving the Standard. The DT understanding of the material resulted in allowing a period of time, similar in length, to a unit not meeting their ECWT because of design timing not significantly beyond the original planned date of October 1, 2027. EOP-012-1 original language was based on the effective date of the requirement. In this case, Requirement R2 was effective 42 months after the effective date of the Standard. The FERC and DT expectation would be that units are prepared for operations at their ECWT (or below) by commercial operation for units in the near future and beyond (but no later than April 1, 2028.) Note that the date for Canadian entities may need adjustment by the appropriate governmental authority and so a footnote was added to allow that to occur. The changes proposed recognize the potential conditions that exist in terms of generators under consideration or construction~~,~~ but removes the means of achieving compliance through a Corrective Action Plan for units establishing their design criteria on or after ~~February 16~~June 29, 2023. Allowances for Corrective Action Plans to achieve the required design criteria were maintained as a means of compliance, but only for units which established design criteria prior to ~~February 16~~June 29, 2023. Additionally, the 2024-03 DT identified that Generator Owners may need to declare a Generator Cold Weather Constraint for units that commit to design criteria on or after the ~~February 16~~June 29, 2023 date under certain circumstances. Generation that begins commercial operation before October 1, 2027 would be subject to Requirement R3.

GOs with generating units that enter commercial operation on or after October 1, 2027 that contractually committed to design criteria before the ECWT definition approval date (~~February 16~~June 29, 2023) and cannot operate for ~~twelve (~~12~~)~~ continuous hours at the ECWT taking into account a concurrent twenty (20) mph wind speed shall have completed a Corrective Action Plan ~~upon beginning commercial operations. The GO then must implement the Corrective Action Plan according to Requirement R7~~by April 1, 2028. It is recognized that Generator Cold Weather Constraints may exist that prevent a new generating unit(s) from being capable of ~~twelve (~~12~~)~~ continuous hours of operation at their identified ECWT. ~~Thus, the 2021-07 DT included, in Requirement R7 Part 7.4, the option for the GO to make a declaration supporting why Generator Cold Weather Constraints preclude the ability to implement appropriate freeze protection measures.~~

GOs with generating units that enter commercial operation on or after October 1, 2027 that contractually committed to design criteria on or after the ECWT definition approval date (~~February 16~~June 29, 2023) that are not able to comply with Requirement R2 would be required to declare a Generator Cold Weather Constraint in accordance with Requirement R8.

The 2021-07 DT chose 12 hours of continuous operation because it is a typical length of the nighttime in winter in most regions of the US and Canada and typically include the hours with the coldest experienced temperatures. The 2021-07 DT was of the opinion that tying the requirement to the 12-hour period would provide a reasonable level of reliability during a cold weather event. The 2021-07 DT chose a concurrent sustained 20 mph wind speed after an evaluation using the wind chill formula developed by the NWS in the United States. Though wind chill temperature is not an exact science, it is widely understood to reflect the **non-linear increased rate of convective heat loss due to air moving at different velocities**. Commonly available charts show wind chill temperatures as a function of actual air temperature at various wind speeds. Approximately 2/3 of the wind chill temperature drop between 0–60 mph is achieved at 20 mph. Using the NWS chart, this holds true for still air temperatures starting at ~~40 F~~40ºF and dropping in 20-degree increments to -40-°F. Further, 20 mph is a wind speed commonly experienced across the ERO and yet appropriately higher than the approximate average wind speeds in the United States and Canada, 6-12 mph and 8-11 mph respectively. ~~Each of these three probabilistically infrequent conditions (the ECWT, a steady 20 mph~~Generator Owners should consider that wind concurrent with cold temperatures will decrease the amount of time for a unit's equipment (e.g., sensing lines) to reach the ambient temperature. While this may not be readily apparent in all cases, operational history of operating at a certain temperature may not equate (in terms of capability or duration of operation) to operating at that same temperature with a 20 mph (32 km/h) wind speed. Providing freeze protection measures, such as tarps or temporary wind block structures, may support the ability to operate longer during extreme cold weather. Each of these three probabilistically infrequent conditions (the ECWT, a steady 20 mph (32 km/h) wind, and a duration of 12 continuous hours at these conditions) is in and of itself conservative. When they have their effects combined, it results in a requirement that will significantly contribute to BES reliability during extreme cold weather conditions.

Rationale for Requirement R3

The 2021-07 Drafting Team ~~did not make any changes to this Requirement. Therefore, the technical rationales are not provided here.~~

~~Requirement R4~~

~~*R4. Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its*~~created a requirement for existing generating units~~. The cold weather preparedness plan(s) shall include the following, at a minimum:~~
~~*[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*~~

~~**4.1** *The lowest calculated Extreme Cold Weather Temperature for each unit*~~, as ~~*determined*~~defined in Requirement ~~*R1;*~~

~~**4.2** *The*~~R3, to be able to operate at their ECWT. Many existing generating ~~*unit cold weather data, as determined in Part 1.2;*~~

~~**4.3** *Documentation identifying Generator Cold Weather Critical Components;*~~

~~**4.4** *Documentation of*~~ units have already demonstrated this capability. An early FERC order on EOP-012-1 rejected a one-hour timing requirement, consequently the 2021-07 DT chose to forego any specific time requirement in Requirement R3. If a generating unit cannot meet the requirements of Requirement R3, it is required to develop a CAP to add new freeze protection measures ~~*implemented on Generator Cold Weather Critical Components which may include measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain); and*~~

~~**4.5** *Annual inspection and maintenance of generating unit(s)*~~or modify existing freeze protection measures ~~*implemented on Generator Cold Weather Critical Components.*~~to be capable of operations at the ECWT (as calculated in Requirement 1).

Rationale for Requirement R4

General Considerations

Requirement R4 requires GOs to develop and maintain cold weather preparedness plans for their unit(s) and describes the information and documentation required in such plans. It is an expansion of the cold weather preparedness plan required under Requirement R7 of EOP-011-2 and is intended to be used and reviewed regularly by the GO. Originally, Requirement R4 Part 4.5 required the GO to annually inspect and perform necessary maintenance of freeze protection measures. The 2024-03 DT added some clarifying language to ensure that annual inspection and maintenance of freeze protection measures is applied specifically to Generator Cold Weather Critical Components. While other freeze protection measures may be applied to equipment by the Generator Owner, the freeze protection measures included in the cold

weather preparedness plan with annual inspections and maintenance are expected to be those applied to Generator Cold Weather Critical Components. Working in concert with other parts of EOP-012-3, including but not limited to Requirements R1, R5, R6, and R7, the substantive elements of the cold weather preparedness plan will be subject to review requirements, updated as necessary, and the ~~GO~~responsible party (GO or GOP) is required to annually train personnel on ~~its~~the cold weather preparedness plan requirements.

Requirement R4 Part 4.1

In Requirement R4 Part 4.1, the GO is required to include in the cold weather preparedness plan the lowest ECWT, as calculated pursuant to Requirement R1, for each unit using reliable source(s) of data. The 2021-07 DT believed that the GO is in the best position to select the most representative weather information relative to its generating unit. The cold weather preparedness plan will be updated if a new lower ECWT is calculated under the Requirement R1 periodic review language.

Requirement R4 Part 4.2

Requirement R4 Part 4.2 is intended to capture, within the cold weather preparedness plan, the information being developed pursuant to Requirement R1 Part 1.2, which is carried over from the previously approved EOP-011 Standard~~,~~ and requires the GO to document several cold weather performance parameters for the unit. This information is valuable, and in some cases, must be shared with other entities consistent with the data specification requirements contained in TOP-003 and IRO-010. A requirement for the GO to document this information within the cold weather preparedness plan ensures the information is readily available and documented when the GO responds to a data specification. It should be noted that if a Corrective Action Plan extension request is approved, the underlying generator cold weather data, as called out in Requirement R1 Part 1.2, should be correctly identified by the Generator Owner~~-~~ and provided to the Reliability Coordinators, Balancing Authorities, and Transmission Operators as requested. The June 2024 ~~FERC~~ Order mentions this in Paragraph 3. The 2024-03 DT believes that the data specification Reliability Standards applicable to Reliability Coordinators, Balancing Authorities, and Transmission Operators (e.g., IRO-010 and TOP-003) require the entities to request the information and the GO is therefore obligated to provide the most current version of the relevant information within a Corrective Action Plan. The 2024-03 DT did not believe a notification Requirement was needed in EOP-012-3 in addition to those already existing in the data specification Reliability Standards. The 2024-03 DT encourages parties to work together to ensure the most accurate and up~~-~~to~~-~~date information is provided, especially when conditions increase risk to reliable operations. See the Technical Rationale for Requirement R1 for substantive rationale regarding the operating limitations and generating unit minimum temperatures documented in the cold weather preparedness plan.

Requirement R4 Part 4.3

In Requirement R4 Part 4.3, the GO identifies the Generator Cold Weather Critical Components to help inform their decision on where to implement appropriate freeze protection measures. The NERC *Reliability Guideline, Generating Unit Winter Weather Readiness – Current Industry Practices*[10], presents a suggested list of components that GOs may choose to utilize when developing their own Generator Cold

Weather Critical Component inventory. The GO shall develop and maintain a list of Generator Cold Weather Critical Components for each unit.

Requirement R4 Part 4.4

Requirement R4 Part 4.4 requires GOs to document the freeze protection measures implemented on Generator Cold Weather Critical Components. These freeze protection measures should include those to reduce the cooling effects of wind. Requirement R4 does not require GOs to install new freeze protection measures to reduce the cooling effects of wind, but rather to identify freeze protection measures for Generator Cold Weather Critical Components that will protect against heat loss and the effect of freezing precipitation, where applicable, and document those measures (e.g., water-resistant insulation, protective shielding, insulated boxes, etc.). These measures could include temporary measures as well, such as wind breaks, but there is no expectation for entities to list all climate-controlled areas as freeze protection measures. Specifically, the freeze protection measures applied to Generator Cold Weather Critical Components must be captured in the cold weather preparedness plan.

Requirement R4 Part 4.5

Requirement R4 Part 4.5 is largely carried over from the previously approved EOP-011 Standard and requires annual inspection and maintenance of the freeze protection measures applied to Generator Cold Weather Critical Components identified in the cold weather preparedness plan. The 2024-03 DT added clarifying language to emphasize the need to effectively mitigate risk on the Generator Cold Weather Critical Components. This Requirement ensures these freeze protection measures will be ready and serviceable when needed.

Rationale for Requirement R5

The ~~**Drafting Team did not make any changes**~~2024-03 DT noted that there could be a combination of operations and maintenance personnel that require training, so minor adjustments were made to ~~**this Requirement. Therefore**~~that extent. Additionally, the ~~**technical rationales are not provided here.**~~

~~Requirement R6~~

~~***R6.** Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature*~~personnel may not be physically located~~ at ~~*or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),*~~[14]~~ develop and implement a Corrective Action Plan when* the ~~*generating unit experiences a Generator Cold*~~

~~[14] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.~~

~~*Weather Reliability Event. The Corrective Action Plan shall be developed before the first day of July, but not more than 150 days after the Generator Cold Weather Reliability Event. The Generator Owner shall: [Violation Risk Factor: High] [Time Horizon: Long-term Planning]*~~

~~***6.1.*** *Ensure the Corrective Action Plan contains at a minimum:*~~

~~***6.1.1.*** *A summary of the identified cause(s) for the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;*~~

~~***6.1.2*** *A list of actions to add new or remedy existing freeze protection measures;*~~

~~***6.1.3.*** *An identification of operating limitations or impacts to the*~~ generator site depending on how an entity implements their cold weather preparedness plan ~~*that would apply until execution of the corrective action(s) identified in the Corrective Action Plan;*~~(s).

~~***6.1.4*** *A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required;*~~

~~***6.1.5*** *A timetable specifying that implementation of the Corrective Action Plan shall be completed prior to the first day of December following the Generator Cold Weather Reliability Event; and;*~~

~~***6.1.6*** *A review of applicability to similar freeze protection measures at generating units owned by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of the Generator Cold Weather Reliability Event;*~~

~~***6.2.*** *Update the Corrective Action Plan action(s) and timetable(s), with justification, and submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 6.1. The submitted Corrective Action Plan extension request shall include the following;*~~

~~***6.2.1.*** *Circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;*~~

~~***6.2.2.*** *Revisions to the selected actions in Part 6.1, if any, including utilization of Operating Procedures, if applicable; and*~~

~~***6.2.3.*** *Updated timetable for implementing the selected actions in Part 6.1.*~~

~~***6.3.*** *Document in a declaration, with justification, any Generator Cold Weather Constraint in accordance with Requirement R8 , if applicable, that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.*~~

Rationale for Requirement R6

Key Recommendation 1d: *To require Generator Owners that experience outages, failures to start, or derates due to freezing to review the generating unit's outage, failure to start, or derate and develop and implement a corrective action plan (CAP) for the identified equipment and evaluate whether the CAP*

applies to similar equipment for its other generating units. Based on the evaluation, the Generator Owner will either revise its cold weather preparedness plan to apply the CAP to the similar equipment or explain in a declaration (a) why no revisions to the cold weather preparedness plan are appropriate, and (b) that no further corrective actions will be taken. The standard drafting team should specify the specific timing for the CAP to be developed and implemented after the outage, derate, or failure to start, but the CAP should be developed as quickly as possible and be completed by no later than the beginning of the next winter season.

The Key Recommendation from the Joint Inquiry Report recommended a Reliability Standard that requires GOs to develop a Corrective Action Plan for generating units that experience outages, failures to starts, or derates due to freezing. The Joint Inquiry Report identifies that most of the outages and derates in the February 2021 event were due to freezing of instrumentation, transmitters, sensing lines, or wind turbine blades (p 166 in the Joint Inquiry Report). As such, the 2021-07 DT followed the Joint Inquiry Report recommendation to require a Corrective Action Plan when the apparent cause of the event is freezing. The 2021-07 DT developed parameters around these events to clarify a reasonable baseline of what level of derate qualified as an event and provide additional language to identify what constitutes a start-up failure. With the additional clarifications, the 2021-07 DT determined that the Reliability Standard would benefit from a defined term, to clearly and efficiently state what constitutes an event. The result was a defined term, Generator Cold Weather Reliability Event, that describes the circumstances for which a Corrective Action Plan is required (i.e., when a freezing event affects the equipment within the control of the GO). The defined term made the Reliability Standard easier to understand and implement by providing clear and reasonable factors to determine whether the impact of an event requires mitigation. However, because of the June 2024 ~~FERC~~ Order, the ~~development and implementation of a Corrective Action Plan was required to be updated by the~~ 2024-03 DT updated Requirement R6 to provide clearer timeline obligations for those units that suffer a Cold Weather Reliability Event. In general, the 2024-03 DT understands that if a Generator Cold Weather Reliability Event occurs, Generator Owners will remediate the issue as soon as possible.

General Considerations for All Corrective Action Plans

To simplify the proposed requirements related to creating a Corrective Action Plan, the 2021-07 DT used the NERC Definition of a Corrective Action Plan. The Corrective Action Plan definition reads "A list of actions and an associated timetable for implementation to remedy a specific problem." As written, the definition requires two parts for a document to qualify as a Corrective Action Plan, i.e., a list of items to be addressed and a timeline for completion. A Corrective Action Plan without both a list of actions and the timeline to implement is not complete. The 2024-03 DT provided additional language for Corrective Action Plans to clarify expectations for those Corrective Action Plans created as a result of a Generator Cold Weather Reliability Event and other Corrective Action Plans referenced throughout the Requirement language. The resulting language kept the underlying structure developed during previous Projects but clarified and added information as needed to meet the June 2024 ~~FERC~~ Order.

The Corrective Action Plan requirement applies to Generator Cold Weather Reliability Events as well as other instances of required actions to support reliable operations within the EOP-012-3 Standard

Requirements. It should be noted that nothing in this standard prevents a GO from taking its own corrective actions resulting from events that do not meet the criteria of a Generator Cold Weather Reliability Event. Startup failure criteria were based on the GADS definition with the removal of "following an outage or reserve shutdown", since the definition of reserve shutdown is different in GADS than it is in some of the Regional Transmission Organizations (~~RTO's~~RTOs).

Requirement R6 requires the GO to develop, implement, and complete a Corrective Action Plan ~~by~~prior to the first day of ~~July or within 150 days of the~~December following a Generator Cold Weather Reliability Event. ~~These~~Note that the 2024-03 DT considered early occurrences (e.g., October or November) of Generator Cold Weather Reliability Events and provided a footnote to allow remedial activities to be completed by December 1 of the following calendar year. The December 1 date was chosen based on the FERC directives and the urgency stated within the June 2024 Order regarding this risk. This timeframe ~~options were chosen by the 2021-07 DT and~~was maintained by the 2024-03 DT to allow GOs to review multiple events holistically following a winter season, if that scenario occurs, and create one Corrective Action Plan for components with common failure causes. Care should be taken when developing a multi-unit or multi-event Corrective Action Plan to ensure it meets the Corrective Action Plan criteria for each unit (e.g., actions and timetables may be different.)

The 2021-07 DT determined that Corrective Action Plans would be required for any freezing event that occurs at temperatures at or above the site's ECWT in accordance with the definition of a Generator Cold Weather Reliability Event. Using the site's ECWT as the threshold, as opposed to the generator unit minimum temperature as determined by the GO, achieves the following:

- Provides a consistent basis for the temperature at which Corrective Action Plans are required for all GOs
- Provides a consistent basis for when Corrective Action Plans are required for all generation types
- Provides a consistent basis for when Corrective Action Plans are required regardless of the level of effort that GOs may have applied to-date winterizing their generators such that they can operate to the ECWT that their sites will reasonably experience
- Removes any incentive (perceived or real) to not further winterize GOs sites to meet the ECWT at the GO site by not providing a window where one site might not be subject to the Corrective Action Plans requirement while sites in the same vicinity experiencing the same temperatures are subject to this requirement
- Removes any disincentive for GOs to design the units to operate well below the ECWT for a site by not requiring them to perform Corrective Action Plans while sites in the same vicinity experiencing the same temperatures are subject to this requirement

~~If a Corrective Action Plan extension is denied by the CEA, then the GO's Correction Action Plan completion date to meet compliance will be equal to the CEA's evaluation time period added to the original due date.~~

The 2024-03 DT provided clarifying language to have Corrective Action Plans developed in response to Generator Cold Weather Reliability Events completed by the first day of December of the winter season following the Generator Cold Weather Reliability Event. Allowances for events which occur early winter season, which varies across the North American continent, were provided with the expectation that more transient fixes occurring after a Generator Cold Weather Reliability Event would be applied quickly but allowing a reasonable time horizon for compliance with this Requirement. A Corrective Action Plan triggered by a Generator Cold Weather Reliability Event and for which the apparent cause is the failure of relatively simple existing piece of freeze protection equipment, the scope of the Corrective Action Plan may be documented after the fact. Such prompt repairs may be completed before creation of the Corrective Action Plan, and the GO may complete the implementation of the Corrective Action Plan simply by evaluating the requirements of R6 and documenting how and when the repair work was completed. An example of this circumstance would be a freezing event caused by a single heat trace circuit failure which would have been sufficient to prevent the event had it not failed. ~~Just to be clear, a Corrective Action Plan is required for Generator Cold Weather Reliability Events. The June 2024 FERC~~ The June 2024 Order also directed changes affecting the application of a Generator Cold Weather Reliability Event Corrective Action Plans ~~with regards~~ to other units within a Generator Owner's fleet. The 2024-03 DT ~~followed~~established a 12 calendar month window from the ~~FERC example~~time of the originating Generator Cold Weather Reliability Event to develop or update such a plan and ~~allowed~~ a 24-calendar month window ~~to address corrective actions~~(initiated on ~~other units.~~the date of the Generator Cold Weather Reliability Event) to implement it. This timeframe ~~would allow~~allows Generator Owners with larger fleets to accommodate ~~the~~any required changes. Considering a Corrective Action Plan extension may be requested, the DT felt that 24 calendar months was sufficient time noting that even large fleets may not have large numbers of units suffering a possible Generator Cold Weather Reliability Event with a similar freeze protection measure. Entities should evaluate the issue with the freeze protection measure that may have initiated the Generator Cold Weather Reliability Event to see if ~~needed.~~ the maintenance and inspection efforts need to be adjusted (at the unit that suffered the Generator Cold Weather Reliability Event as well as at other similar units with similar freeze protection measures applied to Generator Cold Weather Critical Component(s)).

The existence of a Corrective Action Plan should not discourage the Generator Owner from applying any other actions necessary and feasible to prepare a unit to perform at extreme cold weather temperatures during the Corrective Action Plan implementation period.

The 2024-03 DT also created language that allows for Corrective Action Plan extension requests using ~~an ERO Enterprise process.~~the NERC Process. ERO Enterprise staff ~~have~~ developed ~~a process~~the NERC Process that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule). ~~The process~~While TPL-007 has not been utilized extensively, the NERC Process is flexible enough to manage the expected submittals. The DT is not in control of updates to the process but the NERC staff have been engaged and responsive to industry concerns noted during the Standard development timeline. The NERC Process will allow a thorough review in a timely manner for any Corrective Action Plan extension requests including those that go beyond the 24 or 48 calendar month timetables. While there may be actions impacting the implementation and completion of

Corrective Action Plans beyond the control of Generator Owners (e.g., supply chain issues), the Generator Owners should accelerate completion of corrective actions as much as possible to support reliable operations.

The 2024-03 DT updated language regarding Generator Cold Weather Constraints to clarify expectations. Please review ~~Requirement~~Requirements R8 and R9 and Attachment 1 for further discussions of Generator Cold Weather Constraints.

Rationale for Requirement R7

~~***R7.*** *Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, or R3, shall, as applicable: [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*~~

~~***7.1.*** *Include a timetable for implementing the selected corrective action(s) that shall:*~~

~~***7.1.1.*** *List the action(s) which remedy(ies) issues with existing freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan, regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures;*~~

~~***7.1.2.*** *List the action(s) which require(s) new freeze protection measures, if any, to be completed within 48 calendar months of completing development of the Corrective Action Plan; and*~~

~~***7.1.3.*** *Describe the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures.*~~

~~***7.2.*** *Complete all the actions described in Corrective Action Plan in accordance with the specified timetables in Part 7.1;*~~

~~***7.3.*** *Submit a Corrective Action Plan extension request, for the approval of the CEA, where the timetable(s) exceed the timelines for completing selected actions are projected to exceed the timelines in Part 7.1. The submitted request shall:*~~

~~***7.3.1*** *Explain the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;*~~

~~***7.3.2*** *Include, as applicable, revisions to the selected actions in Part 7.1, including utilization of Operating Procedures; and*~~

~~***7.3.3*** *Include an updated timetable for implementing the selected actions in Part 7.1.*~~

~~***7.4.*** *Document in a declaration, with justification, any Generator Cold Weather Constraint in accordance with Requirement R8 that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.*~~

In EOP-012-2, R7 was expanded from EOP-012-1 to provide additional definition on the requirements to implement a Corrective Action Plan, and to meet the direction for this requirement set by the February 2023 FERC Order. One such direction was to define expectations on implementation timelines for Corrective Action Plans. Under EOP-012-2 R7, Corrective Action Plans were divided into two categories: 1) those which address existing freeze protection measure(s), and 2) those which require new equipment or freeze protection measure(s). The former category required completion of the Corrective Action Plan to remedy the cause(s) within 24 months, and the latter required completion of the Corrective Action Plan within 48 months. The 2021-07 DT modeled this timeline structure after similar Corrective Action Plan implementation requirements in TPL-007. These are maximum durations and entities are expected to work diligently to correct issues and take prompt actions to mitigate future issues as soon as practical. At the same time, the 2021-07 DT recognized that the following time ~~-~~consuming activities make the 24 and 48 calendar months maximum timelines reasonable: scoping applicability to similar units, freeze protection engineering and design, project development, ~~annual~~ budgeting ~~process~~processes, material supply lead times, outage scheduling, skilled labor availability, and startup/commissioning. However, the June 2024 ~~FERC~~ Order~~,~~ established directives to clarify timelines and responsibilities associated with Corrective Action Plans. The 2024-03 DT chose to specifically remove Corrective Action Plan obligations for Generator Cold Weather Reliability Events and place those in Requirement R6. For Requirement 7, the 2024-03 DT provided clarifying language regarding existing and new freeze protection measures and the associated completion timelines. Language was provided for Corrective Action Plans that may include changes to existing freeze protection measures and addition of new freeze protection measures to help clarify expectations for completing the corrective actions. Entities are expected to work diligently to correct issues and take prompt actions to mitigate future recurrence. The 2024-03 DT updated ~~Part~~Parts 7.1.3. and 7.1.4 for completeness to ensure updates would be made to document needed changes to the cold weather preparedness plan(s) to eliminate recurrence of issue(s) identified in the Corrective Action Plan. In clarifying these timeframes, the 2024-03 DT considered the FERC directives.

Within the revised Requirement R7, the GO is required to implement the Corrective Action Plan within a timetable defined by the GO in the Corrective Action Plan but limited by maximum durations in Part 7.1. If the GO is unable to complete the Corrective Action Plan within the time limits in Part 7.1, or the corrective action(s) change, the GO is required to update the Corrective Action Plan with justification. GOs that are unable to complete the Corrective Action Plan due to a Generator Cold Weather Constraint are required under Part 7.~~4~~3 to create a declaration of the Generator Cold Weather Constraint which shall be provided to the Compliance Enforcement Authority per Requirement R8. Further requirements for the Generator Cold Weather Constraints are provided under ~~Requirement~~Requirements R8 and R9.

The 2024-03 DT also created language that allows for Corrective Action Plan extension requests using ~~an ERO Enterprise process.~~the NERC Process. ERO Enterprise staff developed ~~a process~~the NERC Process

that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule). The ~~process~~NERC Process will allow a thorough review in a timely manner for any Corrective Action Plan extension requests including those that go beyond the 24 or 48 calendar months. The 2024-03 DT utilized the precedent set by TPL-007 to ensure the unique circumstances of each request will be considered while also avoiding potential compliance burdens which may not have a corresponding reliability benefit (e.g. specific timelines for submission ~~&~~and approval of extension requests). While there may be actions impacting the implementation and completion of Corrective Action Plans beyond the control of Generator Owners (e.g., supply chain issues), the Generator Owners should accelerate completion of corrective actions as much as possible to support reliable operations. It is expected that extension requests will be limited in nature. Generator Owners will have to provide clear justifications with supporting materials within the extension request. Due diligence in ordering equipment, obtaining permits, etc., will be considered as part of the determination of whether a particular set of facts constitute circumstances beyond the control of the entity. Denials of extension requests will be minimized if Generator Owners work diligently to correct issues and take prompt actions. Denial of an extension means the initial timelines for corrective actions must be met.

The 2024-03 DT updated language regarding Generator Cold Weather Constraints to clarify expectations. Please review ~~Requirement~~Requirements R8 and R9 for further discussions of Generator Cold Weather Constraints.

If one or more actions within a Corrective Action Plan fall under a Generator Cold Weather Constraint declaration, it is the intent of the DT that only those constraint affected actions would not be implemented as part of the Corrective Action Plan. The remaining corrective actions should be implemented per the timelines provided unless dependent upon the corrective action triggering the Generator Cold Weather Constraint declaration.

Rationale for Requirement R8

~~***R8.*** *Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*~~

~~***8.1*** *Submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 days of determining that the Generator Cold Weather Constraint is applicable. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit the Generator Cold Weather Constraint declaration(s) no later than 15 days after commercial operation;*~~

~~***8.2*** *Review any Generator Cold Weather Constraint declaration validated by the CEA every 24 calendar months to determine if it remains valid under Attachment 1;*~~

~~***8.3*** *Update the operating limitations associated with capability and availability under Requirement R1 Part 1.2 if applicable; and*~~

~~***8.4 If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with the timetables in Requirement R6 Part 6.1 or Requirement R7 Part 7.1, to begin from the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid.***~~

In the February 2023 FERC Order, the Commission expressed concern that a GO may make a Generator Cold Weather Constraint declaration without informing planning and operational entities (e.g., the Balancing Authority) that are expecting the reliable operation of the generating unit to its ECWT.~~[1]~~. An additional concern was that the Generator Cold Weather Constraint declarations may be used by a functional entity as an opt-out of compliance with requirements set forth in the standards or in a corrective action plan.~~[2]~~. To mitigate the concern, the Commission directed NERC to work with Commission staff and submit a data collection and assessment plan that contains information related to GO constraint declarations and explanations thereof.~~[3]~~. The 2021-07 DT expected that ERO Enterprise compliance staff will be responsible for reviewing declared Generator Cold Weather Constraints and assessing compliance with the Generator Cold Weather Constraint definition criteria in accordance with established processes. The June 2024 ~~FERC~~ Order directives included more ~~discrete~~direct language that required NERC to receive, review, evaluate, and confirm the validity of each Generator Cold Weather Constraint in a timely manner. Additionally, the June 2024 ~~FERC~~ Order directives required an increase in the frequency of reviews of Generator Cold Weather Constraints. If a Corrective Action Plan extension request is denied by the CEA, then the ~~GO's Correction Action Plan completion date to meet compliance will be equal to~~GO may request a joint CEA/NERC review of the ~~CEA's evaluation time period added to the original due date~~denial.

The 2024-03 DT updated Requirement R8 to require the GO to submit, to the Compliance Enforcement Authority, a Generator Cold Weather Constraint in accordance with Attachment 1 under specific timelines. The ERO Enterprise staff have developed ~~a process~~the Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") that leveraged the current TPL-007 Corrective Action Plan extension process (See ~~ERO Enterprise Periodic Data Submittal Schedule)~~ERO Enterprise Periodic Data Submittal Schedule) as a foundation for the Generator Cold Weather Constraint process. The ~~process~~NERC Process will allow a thorough review in a timely manner for any Generator Cold Weather Constraint submitted. The 2024-03 DT created Attachment 1 to provide clear expectations on Generator Cold Weather Constraint conditions. Attachment 1 contains some ~~"pre-approved"~~known Generator Cold Weather Constraint conditions as well as examples of other ~~possible~~case-by-case Generator Cold Weather Constraint conditions that may also be considered valid. To be clear, ~~the "pre-approved"~~all Generator Cold weather Constraints declarations require submittal per the ~~ERO Enterprise process~~NERC Process. The 2024-03 DT could not create an exhaustive list of Generator Cold Weather Constraint conditions but provided language that allows professional judgement to be utilized. The 2024-03 DT believes ~~this process~~the NERC Process in conjunction with Requirement R8 and Attachment 1 effectively meets the

FERC directive regarding receiving, reviewing, evaluating, and confirming the validity of Generator Cold Weather Constraints.

Initially EOP-012-1 required an annual review of Generator Cold Weather Constraints ~~that~~. That frequency of reviews was subsequently changed to five years in EOP-012-2. The June 2024 ~~FERC~~ Order directed that the review frequency be increased from the five-year periodicity. While Generator Owners should perform a review and update any constraint declarations as needed, the 2024-03 DT has developed language ~~to require~~requiring a review of validated Generator Cold Weather Constraints every ~~24 calendar months. The 2024-03 DT did send a survey out during the development of Requirement R8 language asking for stakeholder input and leveraged the results in the determination of 24~~36 calendar months.

The 2021-07 DT believed that Generator Cold Weather Constraint declarations would be the exception, but it is clear to the 2024-03 DT that certain conditions may exist (based on general weather patterns) that will increase the amount of Generator Cold Weather Constraint declarations and subsequent submittals. In anticipation of that scenario, and following the June 2024 ~~FERC~~ Order, the 2024-03 DT considers the ~~ERO Enterprise process~~NERC Process a valuable tool to capture data that may help future understanding of the effectiveness of the ECWT ~~(which is required by the~~. The February 2023 FERC Order and subsequent NERC filing ~~regarding cold weather data~~ require the collection~~.)~~ of data to evaluate the effectiveness of the EOP-12-3 standard.

Updated Generator Cold Weather Constraint declarations would also require an update to the operating limitations provided via data specifications to the entities overseeing reliability (e.g., Balancing Authority, Transmission Operator, or Reliability Coordinator). In this manner, information relevant to valid Generator Cold Weather Constraint declarations are made available to the planning and operational entities pursuant to their data collection authority contained in TOP-003 and IRO-010.

~~Attachment 1~~

~~*Generator Owners shall determine the applicability of a Generator Cold Weather Constraint declared under Requirements R2, R6, and R7 as described below.*~~

~~*A Generator Cold Weather Constraint is any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the following criteria:*~~

~~**Pre-Approved Generator Cold Weather Constraints**~~

~~*The following are circumstances which, if present and confirmed as valid by the Compliance Enforcement Authority, will constitute Generator Cold Weather Constraints:*~~

- ~~*Wind turbine towers that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1.*~~
- ~~*Heat tracing or other de-icing technologies for wind turbine blades that are not available in the Generator Owner's location.*~~

- ~~Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities.~~
- ~~Applying heat to remove accumulated frozen precipitation on solar panels.~~
- ~~Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters.~~

~~Case-by-case Determinations~~

~~The following situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the Compliance Enforcement Authority will these circumstances comprise a valid Generator Cold Weather Constraint:~~

1. ~~The application of a specific freeze protection measure will void an equipment warranty.~~
2. ~~The application of a specific freeze protection measure is precluded by technical or physical limitations. For example:~~
   a. ~~Installing wind breaks around a cooling tower or air-cooled heat exchanger which requires free airflow for its functionality;~~
   b. ~~Applying freeze control measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system.~~
   c. ~~Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.~~

3. ~~The application of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:~~
   a. ~~The application of freeze protection measures would result in the premature retirement of an existing dispatchable generating unit with no acceptable replacement currently available;~~
   b. ~~The freeze protection measures would be applied to a generating unit that has a previously published retirement date within three years of the Generator Cold Weather Constraint declaration;~~
   c. ~~The application of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit(s);~~
   d. ~~The application of freeze protection measures would reduce the generating unit's ability to provide Real Power and Reactive Power by more than three percent; or~~
   e. ~~The application of freeze protection measures would reduce the summer net dependable capability[15] of the generating unit by more than three percent.~~
4. ~~The application of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or~~

[15] ~~"Net dependable capability" refers to the definition used for reporting to the NERC Generating Availability Data System (GADS).~~

~~*standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.*~~

5. ~~*Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Cold Weather Critical Components.*~~

~~*When submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply. An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.*~~

Rationale for Requirement R9

Based on multiple comments regarding Requirement R8 and the FERC directive regarding periodicity of reviews, the 2024-03 DT pulled this Requirement R8 language out as a separate new Requirement R9. There were multiple concerns raised about the 24 calendar month periodicity and the 2024-03 DT chose to extend it to 36 calendar months. CIP-014, a Reliability Standard addressing another significant risk, is proposing a review every 36 calendar months. Based on information shared at the Technical Conference held on November 12, 2024, changes to some technologies that may affect Generator Cold Weather Constraints may take a significant amount of time (well in excess of 36 months) to become available. By shortening from the five calendar years, the 36 calendar month timeline provides a reasonable approach to meeting the Commission's directives without creating undue administrative burden to periodically monitor if Generator Cold Weather Constraints remain valid or if new technologies have become available that effectively obviate the originally validated constraint.

Attachment 1

The 2024-03 DT chose to utilize a limited and discrete list of ~~pre-approved~~known Generator Cold Weather Constraints as well as a description of other case-by-case situational descriptions that may constitute Generator Cold Weather Constraints. All declared Generator Cold Weather Constraints must be confirmed as valid by the Compliance Enforcement Authority. Nevertheless, the limited and discrete list is intended to describe specific circumstances that, if met, would have a very high probability of being approved. The 2024-03 DT discussed providing clarity with examples (as noted by FERC Order Paragraph 47) knowing that additional instances or conditions that may be considered a Generator Cold Weather Constraint may exist.

Per the FERC Order, NERC staff is responsible to provide a process describing the receipt, evaluation, approval (as needed), and validation of Generator Cold Weather Constraints. This process is captured in the ~~"Generator Cold Weather CAP Extension and Constraint Process"~~Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") document.

~~In summary, Attachment 1 contains a list of circumstances that, if confirmed valid by the Compliance Enforcement Authority, are considered to constitute pre-approved Generator Cold Weather Constraints as well as a list of additional situations, circumstances, and criteria that may constitute a Generator Cold Weather Constraint. In utilizing this second list, a Generator Owner must submit to the Compliance Enforcement Authority documentation that defends and supports its declared constraint and describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply.~~

Once a declaration is approved by the CEA it is considered valid.

The 2024-03 DT is intentionally leaving room for additional instances of Generator Cold Weather Constraints to be presented as it would be impossible to foresee every potential set of circumstances that could possibly constitute a constraint. Furthermore, the 2024-03 DT wants to ensure that the Standard language supports the development and adoption of new freeze protection measures, practices, methods, or technologies while not immediately requiring that the new freeze protection measures, practices, methods, or technologies be implemented industry-wide. ~~–~~The 2024-03 DT encourages additional study and implementation of freeze protection measures to remove Generator Cold Weather Constraints, as appropriate, over time.

The 2024-03 DT updated the definition of Generator Cold Weather Constraints to provide clarity as directed by FERC. In addition to modifying the definition, the 2024-03 DT developed Attachment 1. Requirement R8 provides entities a clear understanding of what is expected when managing Generator Cold Weather Constraints and directly references use of Attachment 1. The list of ~~"pre-approved"~~known Generator Cold Weather Constraints focuses on technical issues or conditions that are ~~known~~widely

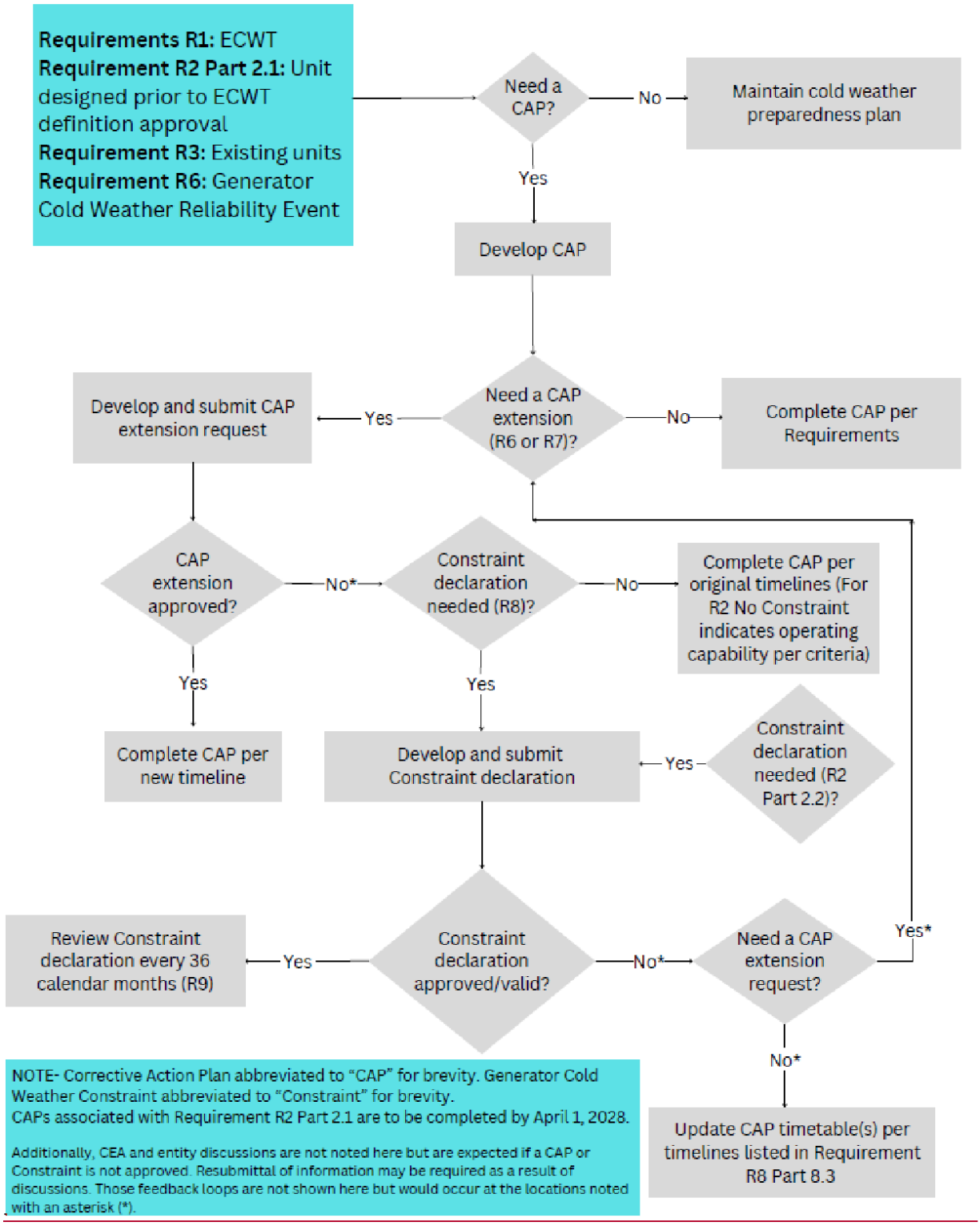
understood to exist which may have limited ~~to~~ or no freeze protection measures ~~available~~ to implement. ~~A~~For example, the DT recognizes that some existing wind turbine towers were not constructed of materials that will meet lower ECWT values and therefore has established a Generator Cold Weather Constraint for those situations.

In addition, the DT recognized the need to balance potential adverse effects to the Bulk Power System reliability from implementing a freeze protection measure with benefits to the same is best done on a localized basis. Therefore the DT has selected a value of three precent, or another value supported by the appropriate functional entity, to mitigate such adverse effects.

Regardless of a Generator Cold Weather Constraint being of the "known" type, a Generator Owner is still required to submit "~~pre-approved~~"known Generator Cold Weather Constraints for approval. The case-by-case determination section of Attachment 1 provides examples of conditions or issues that may constitute a valid Generator Cold Weather Constraint depending on the facts and circumstances~~.~~ presented by the Generator Owner. The language provided is meant to be objective, unambiguous, and auditable.

With all Generator Cold Weather Constraints, it is the responsibility of the Generator Owner to provide supporting materials to facilitate approval and validation of the Generator Cold Weather Constraint by the ERO Enterprise. As mentioned in the Requirement R8 Technical Rational discussion, ~~an ERO Enterprise process has been~~the NERC Process was developed to support the FERC directives in the June 2024 ~~FERC~~ Order. The 2024-03 DT believes the new definition of Generator Cold Weather Constraint, updated language throughout the Standard with emphasis on Requirement R8, and the contents of Attachment 1 ~~provides~~provide significant clarity to industry on what is expected for Generator Cold Weather Constraints to be considered valid.

EOP-012-3 Process Flow Chart: Below is a graphical representation demonstrating the relationship between Requirements:



NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Unofficial Comment Form

Project 2024-03 Revisions to EOP-012-2

Do not use this form for submitting comments. Use the Standards Balloting and Commenting System (SBS) to submit comments on draft two of **EOP-012-3 Extreme Cold Weather Preparedness and Operations** by **8 p.m. Eastern, Friday, December 20, 2024.**

Additional information is available on the project page. If you have questions, contact Senior Standards Developer, Ben Wu (via email), or at 470-542-6882.

Background Information

NERC developed the original version of the generator cold weather preparedness Reliability Standard EOP-012-1 in 2022, under Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination. The purpose of this project was to address standards-related recommendations from the Federal Energy Regulatory Commission (FERC)/NERC/Regional Entity staff review of operations during the February 2021 Winter Storm Uri event.

NERC developed Reliability Standard EOP-012-2 in 2023-2024 to address Commission directives from the February 2023 order approving Reliability Standards EOP-012-1 and EOP-011-3.[1] In the February 2023 Order, the Commission directed that NERC revise EOP-012-1 to clarify the applicability of the standard's requirements for generator cold weather preparedness, further define the circumstances under which a Generator Owner may declare that constraints preclude them from implementing one or more corrective actions to address freezing issues, and to shorten the implementation timeline so cold weather reliability risks would be addressed more quickly.

On June 27, 2024, FERC issued an order approving Reliability Standard EOP-012-2.[2] While finding Reliability Standard EOP-012-2 represented an improvement over the prior version and addressed many of its concerns, FERC found the standard requires further improvement to address certain concerns remaining from its February 2023 order. FERC therefore directed NERC to revise the standard in five areas and to submit a revised standard within nine (9) months of the date of the order, or by March 27, 2025.

1 *N. Am. Elec. Reliability Corp.*, 182 ¶ 61,094 (2023) ("February 2023 Order").

2 *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61, 204 (2024) ("June 2024 Order").

Questions

1. In paragraph 47 of the June 2024 Order, FERC directed NERC to revise EOP-012-2 to "ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them." FERC provided several examples of how NERC may meet directives in this paragraph and explained that NERC may address these concerns in an equally efficient and effective manner, provided NERC explains how it addresses FERC's concerns. The drafting team and industry recognize that every situation that creates a Generator Cold Weather Constraint cannot be listed within Attachment 1 and is the reason for Case-by-Case language provided.

   Do you agree with the industry driven edits to Attachment 1? Please provide any additional comments to consider. If you do not agree, please provide your language change suggestions for the drafting team.
   ☐ Yes
   ☐ No

   Comments:

2. In paragraph 68 of the June 2024 Order, FERC directed NERC to modify Requirement R7 of EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. FERC provided an example for how to address this directive, such as to require shorter timeframes for those units that have experienced issues and allow longer timeframes to address similar potential issues across a fleet for those units that have not experienced issues.

   The drafting team modified Requirement R6 based on industry feedback, while still maintaining the FERC directive. Do you agree that the modifications in Requirement R6 are responsive to the FERC Directives? If you do not agree, please provide your language change suggestions for the drafting team.
   ☐ Yes
   ☐ No

   Comments:

3. In paragraph 72 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to clarify that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

The drafting team provided updated language in Requirement R2 to address the issue of units in different stages of design and construction to support meeting this directive. June 29, 2023 was chosen as a date of demarcation, as that was the date the Extreme Cold Weather Temperature was settled upon, after the approval date of February 16, 2023. Do you agree that the industry driven edits to Requirement R2 are responsive to the FERC directives? If you do not agree, please provide your language change suggestions for the drafting team.

☐ Yes
☐ No

Comments:

4. In paragraph 94 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R8, Part 8.1 of Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations (than every five years) to verify that the declaration remains valid.

   Based on industry feedback, the drafting team created Requirement 9 to require review every 36 calendar months. Do you agree that the revision addresses this directive and provides an effective balance with administrative efforts to ensure Generator Cold Weather Constraints remain valid? If you do not agree, please provide your language change suggestions for the drafting team.

   ☐ Yes
   ☐ No

   Comments:

5. Please provide any additional comments for the standard drafting team to consider, if desired.

   Comments:

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Violation Risk Factor and Violation Severity Level Justifications

Project 2024-03 Revisions to EOP-012-2

This document provides the drafting team's (DT's) justification for assignment of violation risk factors (VRFs) and violation severity levels (VSLs) for each requirement in EOP-012-3. Each requirement is assigned a VRF and a VSL. These elements support the determination of an initial value range for the Base Penalty Amount regarding violations of requirements in FERC-approved Reliability Standards, as defined in the Electric Reliability Organizations (ERO) Sanction Guidelines. The DT applied the following NERC criteria and FERC Guidelines when developing the VRFs and VSLs for the requirements.

NERC Criteria for Violation Risk Factors

High Risk Requirement

A requirement that, if violated, could directly cause or contribute to Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

Medium Risk Requirement

A requirement that, if violated, could directly affect the electrical state or the capability of the Bulk Electric System, or the ability to effectively monitor and control the Bulk Electric System. However, violation of a medium risk requirement is unlikely to lead to Bulk Electric System instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor, control, or restore the Bulk Electric System. However, violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to Bulk Electric System instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

Lower Risk Requirement
A requirement that is administrative in nature and a requirement that, if violated, would not be expected to adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor and control the Bulk Electric System; or, a requirement that is administrative in nature and a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor, control, or restore the Bulk Electric System.

FERC Guidelines for Violation Risk Factors

Guideline (1) – Consistency with the Conclusions of the Final Blackout Report

FERC seeks to ensure that VRFs assigned to Requirements of Reliability Standards in these identified areas appropriately reflect their historical critical impact on the reliability of the Bulk-Power System. In the VSL Order, FERC listed critical areas (from the Final Blackout Report) where violations could severely affect the reliability of the Bulk-Power System:

- Emergency operations
- Vegetation management
- Operator personnel training
- Protection systems and their coordination
- Operating tools and backup facilities
- Reactive power and voltage control
- System modeling and data exchange
- Communication protocol and facilities
- Requirements to determine equipment ratings
- Synchronized data recorders
- Clearer criteria for operationally critical facilities
- Appropriate use of transmission loading relief.

Guideline (2) – Consistency within a Reliability Standard
FERC expects a rational connection between the sub-Requirement VRF assignments and the main Requirement VRF assignment.

Guideline (3) – Consistency among Reliability Standards
FERC expects the assignment of VRFs corresponding to Requirements that address similar reliability goals in different Reliability Standards would be treated comparably.

Guideline (4) – Consistency with NERC's Definition of the Violation Risk Factor Level
Guideline (4) was developed to evaluate whether the assignment of a particular VRF level conforms to NERC's definition of that risk level.

Guideline (5) – Treatment of Requirements that Co-mingle More Than One Obligation
Where a single Requirement co-mingles a higher risk reliability objective and a lesser risk reliability objective, the VRF assignment for such Requirements must not be watered down to reflect the lower risk level associated with the less important objective of the Reliability Standard.

NERC Criteria for Violation Severity Levels

VSLs define the degree to which compliance with a requirement was not achieved. Each requirement must have at least one VSL. While it is preferable to have four VSLs for each requirement, some requirements do not have multiple "degrees" of noncompliant performance and may have only one, two, or three VSLs.

VSLs should be based on NERC's overarching criteria shown in the table below:

Lower VSL	Moderate VSL	High VSL	Severe VSL
The performance or product measured almost meets the full intent of the requirement.	The performance or product measured meets the majority of the intent of the requirement.	The performance or product measured does not meet the majority of the intent of the requirement, but does meet some of the intent.	The performance or product measured does not substantively meet the intent of the requirement.

FERC Order of Violation Severity Levels

The FERC VSL guidelines are presented below, followed by an analysis of whether the VSLs proposed for each requirement in the standard meet the FERC Guidelines for assessing VSLs:

Guideline (1) – Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance

Compare the VSLs to any prior levels of non-compliance and avoid significant changes that may encourage a lower level of compliance than was required when levels of non-compliance were used.

Guideline (2) – Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties

A violation of a "binary" type requirement must be a "Severe" VSL.
Do not use ambiguous terms such as "minor" and "significant" to describe noncompliant performance.

Guideline (3) – Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement

VSLs should not expand on what is required in the requirement.

Guideline (4) – Violation Severity Level Assignment Should Be Based on a Single Violation, Not on a Cumulative Number of Violations

Unless otherwise stated in the requirement, each instance of non-compliance with a requirement is a separate violation. Section 4 of the Sanction Guidelines states that assessing penalties on a per violation per day basis is the "default" for penalty calculations.

VRF Justification for EOP-012-3, Requirement R1

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R1			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.

VSL Justifications for EOP-012-3, Requirement R1	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	There is a clarifying word change from "and" to "or", in all the VSL levels which did not have the unintended consequence of lowering the current level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

VSL Justifications for EOP-012-3, Requirement R1	
Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R2

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R2			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units.

OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units. units.	OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.

VSL Justifications for EOP-012-3, Requirement R2	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	This requirement was modified to capture the difference for generating units for which the Generator Owner first contractually committed to design criteria relevant to this Requirement on or before/after June 29, 2023. The VSL was modified to add Generator Cold Weather Constraint and did not have the unintended consequence of lowering the current level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.

VSL Justifications for EOP-012-3, Requirement R2	
Should Be Consistent with the Corresponding Requirement	
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R3
The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSL Justification for EOP-012-3, Requirement R3
The Drafting Team made non-substantial changes to this Requirement. The VSL did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VRF Justification for EOP-012-3, Requirement R4
The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R4			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner implemented a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable Parts within Requirement R4.	The Generator Owner maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.

VSL Justifications for EOP-012-3, Requirement R4	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	There clarifying change in the High VSL to remove “had and” to align with the requirement language which did not have the unintended consequence of lowering the current level of compliance. There are no changes to other levels of the VSLs.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.

VSL Justifications for EOP-012-3, Requirement R4	
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R5

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R5			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as described in Requirement R5 to the greater of: • one applicable personnel for a single generating unit; or • 5% or less of its total applicable personnel.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as described in Requirement R5 to the greater of: • two applicable personnel for a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as described in Requirement R5 to the greater of: • three applicable personnel for a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as described in Requirement R5 to the greater of: • four or more applicable personnel for a single generating unit; or • more than 15% of its total applicable personnel.

VSL Justifications for EOP-012-3, Requirement R5	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	There is a word change from “at” to “for”, in reference to personnel supporting generating units in all the VSL which did not have the unintended consequence of lowering the current level of compliance. This edit clarifies that individuals needing unit-specific training may support many plant locations and not be specifically assigned at one plant. There are no changes to other levels of the VSLs.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.

VSL Justifications for EOP-012-3, Requirement R5	
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R6

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R6			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 12 but fewer than 15 calendar months after the Generator Cold Weather Reliability Event.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 15 but fewer than 18 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirement R6, but it failed to contain one of the elements in	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 18 but fewer than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirements R6, but it failed to	The Generator Owner failed to develop a Corrective Action Plan where required under Requirement R6. OR The Generator Owner developed a Corrective Action Plan where required under Requirement R6, but failed to implement it. OR The Generator Owner failed to conduct a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, or the

	Requirement R6, Part 6.3.	contain two of the elements in Requirement R6, Part 6.3. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable), but it did not include one of the required elements.	Generator Owner conducted the review, but it was conducted more than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan, but failed to contain three or more of the elements in Requirement R6, Part 6.3. OR The Generator Owner did not submit a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable). OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.4 (if applicable), but it did not include two or more of the elements in Requirement R6, Part 6.4.

VSL Justifications for EOP-012-3, Requirement R6	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	This requirement was modified to ensure that there is a process in place when developing and implementing Corrective Action Plans. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4	Each VSL is based on a single violation and not cumulative violations.

VSL Justifications for EOP-012-3, Requirement R6	
Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	

VRF Justification for EOP-012-3, Requirement R7

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R7			
Lower	**Moderate**	**High**	**Severe**
N/A	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include a description of updates to the cold weather preparedness plan and identification of operating limits as required in Requirement R7, Parts 7.1.3 and 7.1.4.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include one of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include one of the required elements.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include two or more of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include two or more of the required elements. OR The Generator Owner failed to submit a Corrective Action Plan

			extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable). OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) in accordance with Requirement R7 Part 7.3. OR The Generator Owner failed to complete corrective action(s) described in the Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) that preclude the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.

VSL Justifications for EOP-012-3, Requirement R7	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	This requirement was modified to ensure that each Generator Owner shall have dated evidence that demonstrates it implemented each Corrective Action Plan, including updating actions or timetables, or has explained in a declaration why corrective actions are not being implemented in accordance with Requirement R7. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single	Each VSL is based on a single violation and not cumulative violations.

VSL Justifications for EOP-012-3, Requirement R7	
Violation, Not on A Cumulative Number of Violations	

VRF Justification for EOP-012-3, Requirement R8

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R8			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner declared a Generator Cold Weather Constraint and submitted it to the Compliance Enforcement Authority but it did not do so within the timeframe provided in Requirement R8 Part 8.1.	The Generator Owner declared a Generator Cold Weather Constraint, but failed to update its operating limitations as required under Requirement R8, Part 8.2 (if applicable).	The Generator Owner declared a Cold Weather Constraint, but failed to update its Corrective Action Plan following a determination by the Compliance Enforcement Authority that the constraint is invalid in accordance with Requirement R8 Part 8.3 (as applicable).	The Generator Owner declared a Generator Cold Weather Constraint but failed to submit it to the Compliance Enforcement Authority. OR The Generator Owner failed to implement freeze protection measures to provide the necessary capability in accordance with Requirement R8 Part 8.3.

VSL Justifications for EOP-012-3, Requirement R8	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The Drafting Team added Lower VSL and Moderate VSL to enforce that the Generator Owner should submit a Generator Cold Weather Constraint in accordance with Requirement R8, Part 8.1 within the specified timeframe and must comply with Requirement R8, Parts 8.2 through 8.3. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R9

VRF Justifications for EOP-012-3, Requirement R9	
Proposed VRF	**Lower**
NERC VRF Discussion	A VRF of Lower is appropriate due to the fact that reviewing each Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority at least once every 36 calendar months is administrative in nature. Failure to review the declaration in the timeframe would not under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor, control, or restore the bulk electric system. Therefore, it is consistent with the definition of a Lower VRF.
FERC VRF G1 Discussion Guideline 1- Consistency with Blackout Report	This VRF is consistent with the identified areas from the FERC list of critical areas in the Final Blackout Report.
FERC VRF G2 Discussion Guideline 2- Consistency within a Reliability Standard	This requirement has only a main VRF and no different sub-requirement VRFs.
FERC VRF G3 Discussion Guideline 3- Consistency among Reliability Standards	This VRF is consistent with other VRFs that address similar reliability goals in different Reliability Standards.
FERC VRF G4 Discussion Guideline 4- Consistency with NERC Definitions of VRFs	This VRF is consistent with the definition of a lower VRF requirement per the criteria filed with FERC as part of the ERO's Sanctions Guidelines.
FERC VRF G5 Discussion Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation	This requirement does not mingle a higher risk reliability objective and a lesser risk reliability objective. Therefore, the VRF reflects the risk of the whole requirement.

VSLs for EOP-012-3, Requirement R9			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 36 but fewer than 38 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 38 but fewer than 40 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 40 but fewer than 42 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was performed more than 42 calendar months after CEA validation or after the previous Generator Owner review. OR The Generator Owner failed to review a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9.

VSL Justifications for EOP-012-3, Requirement R9	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The Drafting Team drafted Requirement R9 to enforce that the Generator Owner review a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid at least once every 36 months. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

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Consideration of Directives from FERC June 2024 Order Approving EOP-012-2 and Directing Further Revisions

Project 2024-03 Revisions to EOP-012-2

Summary

This mapping document summarizes how the drafting team (DT) considered FERC's directives for further revisions to Reliability Standard EOP-012-2 in its June 27, 2024 approval order[1] when drafting proposed EOP-012-3.

Paragraph 47 – Address Ambiguities Regarding the term Generator Cold Weather Constraint and Criteria

Directive

"Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit to the Commission for approval modifications to proposed Reliability Standard EOP-012-2 that address concerns related to the ambiguity of the newly defined Generator Cold Weather Constraint term and criteria. Specifically, we direct NERC to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective *and* sufficiently detailed so that applicable entities understand what is required of them. One approach to satisfy this directive could be to incorporate into the proposed Reliability Standard a limited and discrete list of circumstances that would qualify as acceptable constraints. We note that NERC's technical rationale document, created by NERC's Standard Drafting Team and included in NERC's filing, includes a list of technical constraints that could serve as a starting point for a list of circumstances that would qualify as acceptable constraints. To the extent that NERC continues to believe that the extent of industry adoption for winterization technologies should be a criterion for declaring a constraint, NERC should clearly explain in its filing how it will assess the extent of such adoption in a way that provides for consistent compliance and enforcement outcomes. Alternatively, NERC could establish a pre-approval process for all Generator Cold Weather Constraint declarations. While a clearly defined list may be preferable, a pre-approval process could be established to ensure entities' declared Generator Cold Weather Constraints are appropriate and can be supported and defended. Further, as part of the directive to develop and submit modifications to the Generator Cold Weather Constraint definition of proposed Reliability Standard

[1] *N. Am. Elec. Reliability Corp.*., 187 FERC ¶ 61,204 (2024) ("June 2024 Order"). In this document, internal citations included within the cited text of the FERC order are omitted.

EOP-012-2, we direct NERC, pursuant to section 215(d)(5) of the FPA, to remove the references to "cost," "reasonable cost," "unreasonable cost," and "good business practices" and replace them with criteria that are objective, unambiguous, and auditable. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
Generator Cold Weather Constraint - Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions. Criteria used to determine a constraint include practices, methods, or technologies which, given the exercise of reasonable judgment in light of the facts known at the time the decision to declare the constraint was made: • Were not broadly implemented at generating units for comparable unit types in regions that experience similar winter climate conditions to provide reasonable assurance of efficacy;	**Generator Cold Weather Constraint** - Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies. **** **R8.** Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: **8.1.** Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows: • For Generator Cold Weather Constraints determined in	The DT removed all of the references to "reasonable cost," "unreasonable cost," "cost," and "good business practices" within the definition of Generator Cold Weather Constraint. The definition of Generator Cold Weather Constraint now refers generally to a condition that would preclude implementing freeze protection measures. Instead, the DT developed Attachment 1, referenced in Requirement R8 and R9, to define the criteria by which a valid Generator Cold Weather Constraint may exist. Attachment 1 consists of: 1. Known Generator Cold Weather Constraints, consisting of circumstances which, if present and confirmed as valid by the Compliance Enforcement Authority, would constitute Generator Cold Weather Constraints; and 2. Case-by-case Determinations of Generator

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
• Could not have been expected to accomplish the desired result; or Could not have been implemented at a reasonable cost consistent with good business practices, reliability, or safety. A cost may be deemed "unreasonable" when implementation of selected freeze protection measure(s) are uneconomical to the extent that they would require prohibitively expensive modifications or significant expenditures on equipment with minimal remaining life. *** **R8.** Each Generator Owner that creates a Generator Cold Weather Constraint declaration shall: **8.1**. Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and **8.2**. Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable.	accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or • For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable. **8.2.** Update the operating limitations under Requirement R1 Part R1.2 if applicable; and **8.3.** If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2. ****	Cold Weather Constraints, consisting of situations which may constitute Generator Cold Weather Constraints, depending on the specific facts and circumstances. Only upon approval by the Compliance Enforcement Authority would these circumstances comprise a valid Generator Cold Weather Constraint under Requirement R8. Attachment 1 provides significant clarity on the conditions or issues that may constitute a valid Generator Cold Weather Constraint. The criteria are intended to be objective, unambiguous, and auditable. The standard retains flexibility to address potentially valid constraints that are not specifically defined in the standard through the Compliance Enforcement Authority review process.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	Attachment 1 (criteria for determining the applicability of a Generator Cold Weather Constraint) (*see draft standard*)	

Paragraph 54: Address Concerns Regarding the Need for a Timely Review and Evaluation of Declared Generator Cold Weather Constraints by NERC

Directive

"Accordingly, we again direct NERC, pursuant to section 215(d)(5) of the FPA, to modify proposed Reliability Standard so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner. We also direct NERC to include in its compliance filing, a plan to timely review such declarations to verify compliance with proposed Reliability Standard EOP-012-2 and its successors or obligations in a corrective action plan and take corrective action where necessary. For example, modifying Standard to require the generator owners to provide declarations (or changes to the declarations) to NERC within 45 days. It is up to NERC whether it would like to delegate this task to the relevant Regional Entities. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R8. Each Generator Owner that creates a Generator Cold Weather Constraint declaration shall: **8.1**. Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and **8.2**. Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable.	**R8.** Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: **8.1.** Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows: • For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or	Requirement R8 would require the Generator Owner declaring a Generator Cold Weather Constraint in accordance with Attachment 1 to submit that constraint to its Compliance Enforcement Authority within 45 days of determining that a Generator Cold Weather Constraint is applicable (for new units, this time is within 15 days of entering commercial operation). This requirement helps ensure the timely submission of constraints to the Compliance Enforcement Authority, which may be NERC or the Regional Entity, for review and approval.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	• For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable. **8.2.** Update the operating limitations under Requirement R1 Part R1.2 if applicable; and **8.3.** If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2. **** **Attachment 1** (criteria for determining the applicability of a Generator Cold Weather Constraint) (*see draft standard*)	Attachment 1 contains a list of known Generator Cold Weather Constraints as well as a list of situations, circumstances, and criteria that may constitute a Generator Cold Weather Constraint for which a Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply to the Compliance Enforcement Authority for approval. If the Generator Cold Weather Constraint is determined to be invalid by the Compliance Enforcement Authority, the Generator Owner must update its Corrective Action Plan and implement according to the standard timelines, beginning from the date of notification. As NERC and the Regional Entities are not users, owners, nor operators of the BPS, provisions for the timeliness of Compliance Enforcement Authority review are not included in EOP-012-3. Additional support and detail for how the Compliance Enforcement Authority will review constraints in a timely manner consistent with the FERC directive is provided in the Generator Cold Weather CAP Extension and Constraint Process.

Paragraph 68 - Address Concerns that Existing EOP-012-2 Requirement R7 Allows Too Long for Entities to Implement Corrective Actions for Existing or New Equipment or Freeze Protection Measures for those Generating Units that Experience a Generator Cold Weather Reliability Event

Directive

"Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. Based on compliance with Requirements R2 and R3, those generating units should have already had appropriate freeze protection measures implemented to be capable of operating at the generating units' respective Extreme Cold Weather Temperature. Therefore, we find that a shorter timeframe to implement corrective actions that address existing or new equipment or freeze protection measures is appropriate. For example, to satisfy this directive, NERC could require generator owners to implement corrective actions prior to the next winter season for generating units that experience a Cold Weather Reliability Event and to complete freeze protection measures on similar equipment on all of its fleet within 24 months of becoming aware of the freeze issue. For corrective action plans that involve larger and more complicated implementations, NERC could incorporate a staggered 48-month corrective action plan implementation deadline."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R6. Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed	**R6.** Each Generator Owner shall, when experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop	To address this directive, the DT revised Requirement R6 to specify shorter implementation timeframes at generating units experiencing a Generator Cold Weather Event, and removed references to this requirement under Requirement R7, which previously addressed all Corrective Action Plans developed under the EOP-012 standard. For Generator Owners experiencing a Generator Cold Weather Event, Corrective Action Plans

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
within 150 days or by July 1, whichever is earlier, and contain at a minimum: **6.1.** A summary of the identified cause(s) for the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data; **6.2.** A review of applicability to similar equipment at generating units owned by the Generator Owner; and **6.3.** An identification of operating limitations or impacts to the cold weather preparedness plan that would apply until execution of the corrective action(s) identified in the Corrective Action Plan. **R7**. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, R3, or R6, shall: **7.1**. Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1**. List the action(s) which address(es) existing equipment or freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan; **7.1.2**. List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar months of completing development of the Corrective Action Plan; and	and implement a Corrective Action Plan(s) to address identified issues as follows: **6.1**. The Generator Owner shall develop a Corrective Action Plan for the generating unit experiencing a Generator Cold Weather Reliability Event. **6.2.** The Generator Owner shall conduct a review of the applicability of the corrective actions from the Corrective Action Plan developed under Part 6.1 to freeze protection measures on similar equipment at other generating unit(s) owned by the Generator Owner and, if corrective actions are applicable, develop or update a Corrective Action Plan no later than 12 calendar months following the Generator Cold Weather Reliability Event to address the other unit(s). **6.3.** For each Corrective Action Plan, the Generator Owner shall include at a minimum: **6.3.1.** A summary of the identified cause(s) of the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;	must specify implementation of corrective actions at the affected unit (i.e. the one experiencing the event) by no later than the first day of the first December following the event. For events occurring early in the season (i.e. prior to December 1), corrective actions shall be implemented prior to the first day of December following the event (for early season events, this would be December 1 of the next calendar year). Recognizing that similar units may be subject to similar issues, Generator Owners must still perform a review of applicability to similar equipment at their other units. Revised Requirement R6 Part 6.3.5.2 would allow the entity to perform this review and implement any corrective measures within 24 calendar months of the Generator Cold Weather Reliability Event. To the extent circumstances beyond the control of the Generator Owner prevent implementation within these timeframes, Requirement R6 Part 6.4 provides a process by which the Generator Owner may seek an extension from the Compliance Enforcement Authority. This process is similar to that included in Requirement R7, discussed more fully in the following section.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
7.1.3. List the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; **7.2**. Implement the Corrective Action Plan in accordance with the specified timetables in Requirement R7 Part 7.1; **7.3**. Update the Corrective Action Plan action(s) and timetable(s), with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and **7.4**. Document in a declaration, with justification, any Generator Cold Weather Constraint that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.	**6.3.2.** A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures; **6.3.3.** An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed; **6.3.4.** A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required; and **6.3.5.** A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows **6.3.5.1.** For the generating unit experiencing the	

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event. [Fn11] **6.3.5.2.** For other generating unit(s) owned by the Generator Owner, within 24 calendar months of the Generator Cold Weather Reliability Event. **6.4** If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval. The submitted Corrective Action Plan extension request shall include the following: **6.4.1.** An explanation of the circumstances causing the delay and why those circumstances are beyond	

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	the control of the Generator Owner; **6.4.2.** Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and **6.4.3.** Updated timetable for implementing the selected actions in Part 6.3.2. **6.5** The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, as applicable. [Fn11]: For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year. **** **R7.** Each Generator Owner that is required to develop a Corrective Action Plan under Requirements R1 or R3 shall develop and implement the Corrective Action Plan in accordance with the following:	

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	7.1. For each Corrective Action Plan, the Generator Owner shall include at a minimum the following: **7.1.1.** A list of any actions that require new freeze protection measures, with a timetable specifying completion of such measures within 48 calendar months of completing development of the Corrective Action Plan; **7.1.2.** A list of any actions that remedy issues with existing freeze protection measures with a timetable specifying completion of such measures within 24 calendar months of completing development of the Corrective Action Plan (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures);	

Paragraph 70: Address the Finding that Any Extensions of a Corrective Action Plan Implementation Deadline Beyond the Maximum Implementation Timeframe Provided by the Standard be Pre-Approved by NERC

Directive

"Therefore, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC. This approach is consistent with prior Commission action in Order No. 851 where the Commission directed NERC to require pre-approval for extensions beyond the timelines required in the Reliability Standard. In Order No. 851, the Commission explained that although case-by-case extension determinations may be more uncertain or have associated burdens, the more compelling imperative is that automatic extensions have the potential for abuse by unduly delaying mitigation, and would lead to delayed visibility for NERC."

See also P 3 (summarizing directives): "[W]e direct NERC to:… develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the Standard is pre-approved by NERC and to ensure that the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R6. Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability	**6.4** If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority for	To address this directive, the DT has added new Requirement R6, Part 6.4, and Requirement R7 Part 7.2 to require any Generator Owner seeking to extend a Corrective Action Plan implementation deadline beyond the maximum implementation timeframe required by the standard seeks pre-approval of the extension by the Compliance Enforcement Authority. This language is similar to that used in the TPL-007

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
Event. The Corrective Action Plan shall be developed within 150 days or by July 1, whichever is earlier, and contain at a minimum: **6.1.** A summary of the identified cause(s) for the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data; **6.2.** A review of applicability to similar equipment at generating units owned by the Generator Owner; and **6.3.** An identification of operating limitations or impacts to the cold weather preparedness plan that would apply until execution of the corrective action(s) identified in the Corrective Action Plan. **** **R7**. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, R3, or R6, shall: **7.1**. Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1**. List the action(s) which address(es) existing equipment or freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan; **7.1.2**. List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar	approval. The submitted Corrective Action Plan extension request shall include the following: **6.4.1.** An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner; **6.4.2.** Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and **6.4.3.** Updated timetable for implementing the selected actions in Part 6.3.2. **** **7.2.** If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R7 Part 7.1 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following:	standard, and the ERO Enterprise would follow a similar review process. With respect to that part of Paragraph 3 relating to "ensuring the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension": Under EOP-012-3 Requirement R6 Part 6.3.3, pertaining to units experiencing a Generator Cold Weather Event, the Generator Owner would be required to identify operating limitations that would apply until execution of the Corrective Action Plan. Under EOP-012-3 Requirements R2 and R3, a Corrective Action Plan would be required where the Generator Owner cannot meet the required operational capability for its unit. The TOP-003 and IRO-010 standards require the Transmission Operator, Balancing Authority, and Reliability Coordinator to maintain data specifications for their real-time and operational planning analyses that include provisions for notification of BES generating unit(s) status during local forecasted cold weather to include operating limitations based on capability and availability, among other factors. These

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
months of completing development of the Corrective Action Plan; and **7.1.3**. List the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; **7.2**. Implement the Corrective Action Plan in accordance with the specified timetables in Requirement R7 Part 7.1; **7.3**. Update the Corrective Action Plan action(s) and timetable(s), with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and **7.4**. Document in a declaration, with justification, any Generator Cold Weather Constraint that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.	**7.2.1.** An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner; **7.2.2.** Revisions to the selected actions in Parts 7.1, if any, including utilization of operating procedures, if applicable; and **7.2.3.** Updated timetable for implementing the selected actions in Part 7.1.	standards require the Generator Owner to provide the requested data. Additionally, the DT discussed other mechanisms that reliability entities have for obtaining up-to-date information on the status and availability of generators. After considering these standards, the DT determined that no additional requirement would be needed to ensure the "generator owner informs relevant registered entities of operating limitations in extreme cold weather" specifically during the period of Corrective Action Plan extension. To the extent a Transmission Operator, Balancing Authority, or Reliability Coordinator would find the additional detail useful, it may request this information as part of its data specifications, and the Generator Owner would be required to provide it. However, a requirement in EOP-012-3 for the Generator Owner to provide this information, absent a communicated need, may not provide any reliability benefit.

Paragraph 72: Address the Finding that Generators that are First Commercially Operational on or after October 1, 2027, Should Have Freeze Protection Measures Either Designed into Their Generating Systems, or, if a Corrective Action Plan is Needed, then It Should be Completed by the Time that Such Generating Units Go into Commercial Operation.

Directive

"We thus find that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to clarify that any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R2. Applicable to generating units with a commercial operation date on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), shall: • Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum	**R2.** Applicable to generating units that begin commercial operation on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), shall: **2.1** For generating units for which the Generator Owner first contractually committed to design criteria relevant to this Requirement before June 29, 2023:	To address this directive, the DT revised Requirement R2 which pertains to units going into commercial operation after October 1, 2027 to separate requirements for units that are truly "new" and should have more robust capabilities designed in without need for corrective actions, and units that may have already been significantly far along in the design phase and for whom full compliance at the time of entering commercial operation (which may be after the in-service date) would represent a significant hardship. In considering this directive, the DT considered that the 2021-07 DT recommended this requirement apply to generation going into

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
operational duration for intermittent energy resources if less than twelve (12) continuous hours; or • Develop a Corrective Action Plan(s) to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours.	• Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or • Develop, implement, and complete by April 1, 2028, a Corrective Action Plan to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if	service three (3) years after the effective date of EOP-012-1 (i.e., based on October 1, 2024 that date is October 1, 2027). The 2021-07 DT believed, and the Project 2024-03 agrees, that there needs to be allowances made for units that are far along in the development process, but do not expect to achieve commercial operation prior to October 1, 2027. While not changing the October 1, 2027 date, the DT has proposed a means to accommodate these units, which are expected to be limited in number, while overall raising the bar for reliability. For units that were designed prior to June 29, 2023, which is when issues raised on rehearing in FERC's February 2023 order approving EOP-012-1 were resolved, entities may implement a Corrective Action Plan to meet the more stringent capability requirements applicable to new generation in Requirement R2. The DT considered that, prior to this time, there was some uncertainty as to the specific winterization criteria that would be required and by when; thus, these entities may not have accounted for the criteria in their designs. Additionally, based on information shared at the technical conference held on November 12, 2024 changes to technologies take a significant amount of time to become available. Project development among Original Equipment Manufacturers was

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	less than twelve (12) continuous hours; or • Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8. **2.2** For generating units for which the Generator Owner first contractually committed to design criteria relevant to this Requirement on or after June 29, 2023: • Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or	estimated to normally take approximately five to seven years. The DT considered that, with several regions predicted to experience resource adequacy issues in future years, there would be a reliability benefit to allow those units that are likely to be far along in the development phase to enter commercial operation for winter 2027 and complete a Corrective Action Plan by April 1, 2028 that would allow them to meet the more stringent requirements for new generation, rather than delay their availability until such corrective actions are completed. For units that are or were designed after that point, entities must either meet the requirements or, if meeting the requirements is not possible, declare a Generator Cold Weather Constraint in accordance with Requirement R8.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	• Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.	

Paragraph 76: To Address Concerns that EOP-012-2 Requirement R7 has Ambiguities in the Implementation Plan Timelines that Apply to Certain Generator Owners

Directive

"We believe that proposed Reliability Standard EOP-012-2, Requirement R7's corrective action plan implementation deadlines have remaining ambiguities that need to be addressed. As noted above, the Commission has previously expressed similar concerns regarding the vagueness and enforceability of Reliability Standards language. Specifically, we agree with the concerns raised by the ISO/RTO Council that Requirement R7 of proposed Reliability Standard EOP-012-2 does not provide clear direction as to the required corrective action plan implementation timeline that applies to certain generator owners. For example, it is unclear how the corrective action plan implementation timeline would apply if a generator owner had combinations of both existing and new equipment for freeze protection measures. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to address these ambiguities by expanding on Requirement R7.1.1 and 7.1.2 to make it clear which corrective action plan implementation deadline applies to which generator owner."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R7. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, R3, or R6, shall: **7.1**. Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1**. List the action(s) which address(es) existing equipment or freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan; **7.1.2**. List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar	**6.3.5.** A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows **6.3.5.1.** For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event. **6.3.5.2.** For other generating unit(s) owned by the Generator Owner,	To address this directive, the DT has included CAP timelines in Requirement R6 Part 6.3.5 for CAPs generated due to experiencing a Generator Cold Weather Reliability Event which include no later than the first day of the first December following the event. For events occurring early in the season (i.e. prior to December 1), corrective actions shall be implemented prior to December 1 of the next calendar year following the event. Recognizing that similar units may be subject to similar issues, Generator Owners must still

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
months of completing development of the Corrective Action Plan; and **7.1.3**. List the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures;	within 24 calendar months of the Generator Cold Weather Reliability Event. **** **R7.** Each Generator Owner that is required to develop a Corrective Action Plan under Requirements R1 or R3 shall develop and implement the Corrective Action Plan in accordance with the following: **7.1.** For each Corrective Action Plan, the Generator Owner shall include at a minimum the following: **7.1.1.** A list of any actions that require new freeze protection measures, with a timetable specifying completion of such measures within 48 calendar months of completing development of the Corrective Action Plan; **7.1.2.** A list of any actions that remedy issues with existing freeze protection measures with a timetable specifying completion of such measures within 24 calendar months of completing development of the Corrective Action Plan	perform a review of applicability to similar equipment at their other units. Revised Requirement R6 Part 6.3.5.2 would allow the entity to perform this review and implement any corrective measures within 24 calendar months of the Generator Cold Weather Reliability Event. Additionally in Requirement R7 Part 7.1.2 the DT added “regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures” to clarify which implementation timelines apply.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	(regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures);	

Paragraph 94: To address the concern that Generator Cold Weather Constraint Declarations Should be Reviewed More Frequently than Once Every Five Years to Ensure the Constraint Remains Valid

Directive

"We agree with the ISO/RTO Council that the proposed five-year review period for the declared Generator Cold Weather Constraints in Requirement R8.1 could delay the identification and adoption of new freeze protection measures and does not represent the current pace of technological advancements. We acknowledge that a more frequent review does impose some additional administrative burden to the generator owner to review the technological advancements that hindered its ability to winterize; nonetheless, a lengthy period between a Generator Cold Weather Constraint declaration review by the generator owner offers little incentive to timely adopt new freeze protection technologies. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R8, Part 8.1 of proposed Reliability Standard EOP 012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations to verify that the declaration remains valid. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R8. Each Generator Owner that creates a Generator Cold Weather Constraint declaration shall: **8.1**. Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and **8.2**. Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable.	**R9.** The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. **** **Attachment 1** (criteria for determining the applicability of a Generator Cold Weather Constraint) (*see draft standard*)	To address this directive, the DT drafted Requirement R9 to require review of all validated Generator Cold Weather Constraints at least once every 36 calendar months to ensure the constraint remains valid. Language regarding reviews "as needed when a change of status" occurs was removed due to the more frequent periodicity. This timeline was based on consideration of stakeholder comments regarding the optimal timeframe for such reviews, considering the pace that new technologies are brought to market. By shortening from five calendar years, the 36

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
		calendar month timeline provides a reasonable approach to meeting the Commission's directives without creating undue administrative burden to periodically monitor if Generator Cold Weather Constraints remain valid or if new technologies have become available that effectively obviate the originally validated constraint.

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EOP-012-3

Generator Cold Weather CAP Extension and Constraint Process

Background

This Electric Reliability Organization (ERO) Generator Cold Weather Corrective Action Plan (CAP) Extension and Constraint Process document addresses how ERO Enterprise staff will review generator cold weather CAP extensions and Constraints developed under Reliability Standard EOP-012-3 Requirements and Attachment 1. The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.

NERC Compliance Assurance & Certification will maintain this document under existing ERO Enterprise processes. This document will be reviewed and updated by NERC Compliance Assurance & Certification, as needed. The steps outlined here will help to ensure a timely, structured, and consistent approach to CAP extension request and Generator Cold Weather Constraint submittals and processing.

CAP Extension Request Review Process

Process Overview

If a registered entity (entity) has determined that a Corrective Action Plan (CAP) developed in accordance with EOP-012-3 Requirements R6 or R7 cannot meet the timetable provided per R6 Part 6.3 or R7 Part 7.1, then the entity will submit an extension request to the ERO Enterprise for approval no less than 60 calendar days prior to the original required CAP completion date[1]. It is the Generator Owners obligation and responsibility to provide clear documentation with the extension request in a timeframe that allows the ERO Enterprise to process the request effectively.

The entity will work with the Regional Entity designated as its Compliance Enforcement Authority (CEA) as outlined in this process. The entity submitting the extension request will be referred to as the 'submitting entity' and may represent only itself or multiple registered entities who have developed a joint extension request[2]. The submitting entity is responsible for ensuring all registered entities who are jointly submitting the extension request are listed in the requested information below and for distributing any communications from its CEA to the other entities that are part of the joint extension request. If a joint extension request is submitted for multiple registered entities who have different Regional Entities designated as the CEA, the submitting entity's CEA will perform the steps outlined in this process and will be responsible for coordinating with the Regional Entity(ies) that are the designated CEA for the additional entities party to the joint extension request.

[1] The ERO Enterprise is aware that in certain situations the submittal timeframes may not be met due to circumstances beyond the control of a Generator Owner. The ERO Enterprise will prioritize efforts to help ensure timely processing of extension requests as these circumstances arise.

[2] As a single Corrective Action Plan may be developed for multiple sites and multiple entities, a Corrective Action Plan extension request may be done in a similar manner.

For entities in Coordinated Oversight, the CEA for this process is the Lead Regional Entity (LRE). The LRE will coordinate with the Affected Regional Entity(ies) (ARE) and the AREs may participate in the joint review as well.

Step 1 – Registered Entity Submittal

If an entity determines that it cannot meet the required timetable for completing a CAP, the submitting entity will submit the requisite data to their CEA through Align and the Secure Evidence Locker (SEL) or other process tools as directed by the CEA.

Entities are encouraged to submit the extension request as soon as they are aware they will not meet the CAP completion date, but no later than 60 calendar days before the original required completion date. The 60-day timeframe provides the submitting entity and the CEA sufficient time to have discussions, as needed, prior to the required completion date. It is the submitting entity's responsibility to ensure that all information detailed in EOP-012-3 Part 6.4 or Part 7.2 and requested in Align is provided in the entity's extension request to facilitate the review.

Step 2 – ERO Enterprise Review

The CEA will acknowledge receipt of the submission in writing (either through Align or email) within 15 calendar days and verify that all information detailed in EOP-012-3 Part 6.4 or Part 7.2 is provided in the submittal. The CEA will work with the submitting entity to provide any missing information. The CEA will notify NERC of the extension request submittal and provide all associated information when acknowledging receipt of the submission.

The CEA will then perform a review of (1) the circumstances beyond the control of the entity preventing implementation of the CAP within the identified timetable; (2) the revisions to the selected actions in the CAP; and (3) the updated timetable for implementing the selected actions[3]. Any additional information requested to support the extension request review will be coordinated with the submitting entity by the CEA. The CEA will complete the review within 45 calendar days of acknowledgement or provide notification to the submitting entity that they are extending the time needed for review.

Examples of circumstances beyond the control of the responsible entity include, but are not limited to:

- Delays resulting from regulatory/legal processes, such as permitting.
- Delays resulting from stakeholder processes required by tariff.
- Delays resulting from equipment lead times; or
- Delays resulting from unit outages being denied.

Due diligence (i.e., reasonable steps taken) in ordering equipment, obtaining permits, scheduling outages, etc., will be considered as part of the determination of whether a particular set of facts constitute circumstances beyond the control of the entity.

[3] NERC may choose to participate in any review at its own discretion or at the request of the CEA.

Step 3 – Registered Entity Notification

The CEA will communicate the approval or denial of the extension request or continuation of the time needed to review the extension request in writing to the submitting entity including the rationale for the determination. For any continuation of the review, the CEA will also provide the submitting entity with a revised timeline for when the determination will be provided. If an extension request is denied, the selected actions in the CAP need to be completed in accordance with the original timetables.

If a CAP extension request was denied, the submitting entity may request, within five (5) calendar days of denial, a joint NERC and CEA review of the denial. The joint review should take no longer than 10 calendar days (subject to the information and resources available.) NERC and the CEA will evaluate the information provided and the submitting entity will be notified of the determination.

Step 4 – Reporting to NERC

Quarterly, the CEA will provide NERC a report that, at a minimum, includes each extension request, whether the request was approved or denied, and the CEA's rationale for its decision.

Constraint Review Process

Process Overview

If a registered entity (entity) has determined that a Generator Cold Weather Constraint, developed in accordance with Reliability Standard EOP-012-3 Attachment 1, exists, the entity will work with the Regional Entity designated as its CEA to submit the Generator Cold Weather Constraint, with supporting documentation, to the CEA for review, evaluation, and validation or approval as outlined in this process.

The entity submitting the Generator Cold Weather Constraint(s) will be referred to as the 'submitting entity' and may represent itself or multiple registered entities under the same ownership with the same Generator Cold Weather Constraint. The submitting entity is responsible for ensuring all registered entities included are listed in the requested information and is for distributing any communications from its CEA to the other entities that are part of the Generator Cold Weather Constraint. If a Generator Cold Weather Constraint is submitted for multiple registered entities under the same ownership who have different Regional Entities designated as the CEA, the submitting entity's CEA will perform the steps outlined in this process and will be responsible for coordinating with the Regional Entity(ies) that are the designated CEA for the additional entities party to the Generator Cold Weather Constraint.

For entities in Coordinated Oversight, the CEA for this process is the Lead Regional Entity (LRE). The LRE will coordinate with the Affected Regional Entity(ies) (ARE) and the AREs may participate in the joint review as well.

Step 1 – Registered Entity Submittal

If an entity determines that it meets the required Generator Cold Weather Constraint language within Attachment 1, the submitting entity will submit the requisite data to their CEA through Align and the Secure Evidence Locker or other process tools as directed by the CEA.

Entities are encouraged to submit the Generator Cold Weather Constraint as soon as they are aware they will meet the Generator Cold Weather Constraint language within Attachment 1 but are required to meet EOP-012-3 Requirement R8[4]. Early submittal is requested to allow the CEA time to review, evaluate, and validate or approve the Generator Cold Weather Constraint.

If an entity determines a Generator Cold Weather Constraint is required for a unit, then subsequently has another unit that requires declaration of the same Generator Cold Weather Constraint (e.g., the same issue occurred at another location with implementing a freeze protection measure) an update to the original Generator Cold Weather Constraint is allowed. Note that supporting information for the other site is needed and the submittal/review timelines (per Requirement R8 and this process) will remain the same for the "new" addition. This will allow a Generator Owner to perform the 36-calendar month review of the Generator Cold Weather Constraint for both instances at the same time.

It is the submitting entity's responsibility to ensure that all information detailed in EOP-012-3 R8 and Attachment 1 is provided in the entity's submittal to facilitate the CEA review. The submitting entity should review language within Attachment 1 and identify, in the submittal, if the Generator Cold Weather Constraint is a known Generator Cold Weather Constraint or a Generator Cold Weather Constraint requiring further review for approval.

Step 2 – ERO Enterprise Review

The CEA will acknowledge receipt of the submission in writing (either through Align or email) within 15 calendar days and verify that all information detailed in EOP-012-3 R8 and Attachment 1 is provided in the submitting entity's submittal. The CEA will work with the submitting entity to provide any missing information. The CEA will notify NERC of the Generator Cold Weather Constraint submittal (either through Align or via email) when acknowledging receipt of the submission.

The CEA will review the Generator Cold Weather Constraint submittal and supporting information[5]. Any additional information requested to support the Generator Cold Weather Constraint review, evaluation, and validation or approval will be coordinated with the submitting entity by the CEA. The CEA will complete the review within 10 calendar days of submittal receipt confirmation for known Generator Cold Weather Constraint and 45 calendar days of submittal receipt confirmation for those Generator Cold Weather

[4] Per EOP-012-3 R8.1, the Generator Owner must submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable for in-service units. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, the Generator Owner must submit the Generator Cold Weather Constraint declaration(s) no later than 15 calendar days after commercial operation.

[5] NERC may choose to participate in any review at its own discretion or at the request of the CEA.

Constraint requiring further review for approval or provide notification to the submitting entity that they are extending the time needed to review[6].

The determination whether to approve the case-by-case Generator Cold Weather Constraint will be based on the specific facts and circumstances provided by the submitting entity that defends and supports the declared constraint under the identified situations in EOP-012-3 Attachment 1.

Step 3 – Registered Entity Notification

The CEA will communicate the validation, approval, or denial of the Generator Cold Weather Constraint or continuation of the time needed to review the Generator Cold Weather Constraint in writing (via Align or email) to the submitting entity including the rationale for the determination. For any continuation of the review, the CEA will also provide the submitting entity with a revised timeline for when the determination will be provided. Denial of a Generator Cold Weather Constraint requires the entity to update its CAPs with corrective actions that will be completed within the timetables in Requirement R6 Part 6.3 or Requirement R7 Part 7.1 to begin from the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid. Communication efforts between the submitting entity and the CEA related to updates of the CAP and timetables resulting from a denial of a Generator Cold Weather Constraint are strongly encouraged.

If a Generator Cold Weather Constraint was denied, the submitting entity may request, within five (5) calendar days of denial, a joint NERC and CEA review of the denial. The joint review should take no longer than 10 calendar days (subject to the information and resources available.) NERC and the CEA will evaluate the information provided and the submitting entity will be notified of the determination.

Step 4 – Reporting to NERC

Quarterly, the CEA will provide NERC a report that, at a minimum, includes each Generator Cold Weather Constraint request received, whether the request was validated, approved, or denied, and the CEA's rationale for its decision.

[6] If a large number of entities submit Generator Cold Weather Constraints at the same time (especially those tied to initial performance expectations as set in the EOP-012-3 Implementation Plan), the ERO Enterprise anticipates additional time will be needed to accommodate these initial reviews.

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EOP-012-3

Generator Cold Weather CAP Extension and Constraint Process

Background

This Electric Reliability Organization (ERO) Generator Cold Weather Corrective Action Plan (CAP) Extension and Constraint Process document addresses how ERO Enterprise staff will review generator cold weather CAP extensions and Constraints developed under Reliability Standard EOP-012-3 Requirements ~~R6, R7, R8 and Attachment 1 to ensure a timely, structured, and consistent approach to CAP extension and Constraint submittals and processing.~~ and Attachment 1. The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.

NERC Compliance Assurance & Certification will maintain this document under existing ERO Enterprise processes. This document will be reviewed and updated by NERC Compliance Assurance & Certification, as needed. The steps outlined here will help to ensure a timely, structured, and consistent approach to CAP extension request and Generator Cold Weather Constraint submittals and processing.

CAP Extension Request Review Process

Process Overview

If a registered entity (entity) has determined that a Corrective Action Plan (CAP) developed in accordance ~~W~~with EOP-012-3 Requirements R6 or R7 cannot meet the timetable provided per R6 Part 6.~~1~~3 or R7 Part 7.1, then the entity will submit an extension request to the ERO Enterprise for approval no less than 60 calendar days prior to the original required CAP completion date~~.~~[1]. It is the Generator Owners obligation and responsibility to provide clear documentation with the extension request in a timeframe that allows the ERO Enterprise to process the request effectively.

~~The steps outlined here should be followed to ensure a timely, structured, and consistent approach to extension request submittals and processing.~~

The entity will work with the Regional Entity designated as its Compliance Enforcement Authority (CEA) as outlined in this process. The entity submitting the extension request will be referred to as the 'submitting entity' and may represent only itself or multiple registered entities who have developed a joint extension request[2]. The submitting entity is responsible for ensuring all registered entities who are jointly submitting the extension request are listed in the requested information below and for distributing any communications from its CEA to the other entities that are part of the joint extension request. If a joint extension request is submitted for multiple registered entities who have different Regional Entities

[1] The ERO Enterprise is aware that in certain situations the submittal timeframes may not be met due to circumstances beyond the control of a Generator Owner. The ERO Enterprise will prioritize efforts to help ensure timely processing of extension requests as these circumstances arise.

[2] As a single Corrective Action Plan may be developed for multiple sites and multiple entities, a Corrective Action Plan extension request may be done in a similar manner.

designated as the CEA, the submitting entity's CEA will perform the steps outlined in this process and will be responsible for coordinating with the Regional Entity(ies) that are the designated CEA for the additional entities party to the joint extension request.

For entities in Coordinated Oversight, the CEA for this process is the Lead Regional Entity (LRE). The LRE will coordinate with the Affected Regional Entity(ies) (ARE) and the AREs may participate in the joint review as well.

Step 1 – Registered Entity Submittal

If an entity determines that it cannot meet the required timetable for completing a CAP, the submitting entity will ~~contact their CEA to coordinate submittal of an extension request. The submitting entity will~~ submit the requisite data to their CEA through Align and the Secure Evidence Locker (SEL) ~~as needed~~ or other process tools as ~~determined~~directed by the CEA.

Entities are encouraged to submit the extension request as soon as they are aware they will not meet the CAP completion date, but no later than 60 calendar days before the original required completion date. The 60-day timeframe provides the submitting entity and the CEA sufficient time to have discussions, as needed, prior to the required completion date. It is the submitting entity's responsibility to ensure that all information detailed in EOP-012-3 Part 6.~~2~~4 or Part 7.~~3~~2 and requested in Align is provided in the entity's extension request to facilitate the review.

Step 2 – ERO Enterprise Review

The CEA will acknowledge receipt of the submission in writing (either through ~~ALIGN~~ Align or email) within 15 calendar days and verify that all information detailed in EOP-012-3 Part 6.~~2~~4 or Part 7.~~3 as required~~ 2 is provided in the ~~submitting entity's extension request~~ submittal. The CEA will work with the submitting entity to provide any missing information. The CEA will notify NERC of the extension request submittal and provide all associated information when acknowledging receipt of the submission.

The CEA will then perform a ~~joint~~ review of (1) the circumstances beyond the control of the entity preventing implementation of the CAP within the identified timetable; (2) the revisions to the selected actions in the CAP; and (3) the updated timetable for implementing the selected actions[3]. Any additional information requested to support the extension request review will be coordinated with the submitting entity by the CEA. The CEA will complete the review within 45 calendar days of acknowledgement or provide notification to the submitting entity that they are extending the time needed for review.

Examples of circumstances beyond the control of the responsible entity include, but are not limited to:

- Delays resulting from regulatory/legal processes, such as permitting.
- Delays resulting from stakeholder processes required by tariff.

[3] NERC may choose to participate in any review at its own discretion or at the request of the CEA.

- Delays resulting from equipment lead times; or
- Delays resulting from unit outages being denied.

Due diligence (i.e., reasonable steps taken) in ordering equipment, obtaining permits, scheduling outages, etc., will be considered as part of the determination of whether a particular set of facts constitute circumstances beyond the control of the entity.

Step 3 – Registered Entity Notification

The CEA will communicate the approval or denial of the extension request or continuation of the time needed to review the extension request in writing to the submitting entity including the rationale for the determination. For any continuation of the review, the CEA will also provide the submitting entity with a revised timeline for when the determination will be provided. If an extension request is denied, the selected actions in the ~~Corrective Action Plan~~CAP need to be completed in accordance with the original timetables.

If a CAP extension request was denied, the submitting entity may request, within five (5) calendar days of denial, a joint NERC and CEA review of the denial. The joint review should take no longer than 10 calendar days (subject to the information and resources available.) NERC and the CEA will evaluate the information provided and the submitting entity will be notified of the determination.

Step 4 – Reporting to NERC

Quarterly, the CEA will ~~send~~provide NERC a report that, at a minimum, includes each extension request, whether the request was approved or denied, and the CEA's rationale for its decision.

Constraint Review Process

Process Overview

If a registered entity (entity) has determined that a Generator Cold Weather Constraint, developed in accordance with Reliability Standard EOP-012-3 Attachment 1, ~~is required this process shall be followed to ensure a timely, structured, and consistent approach.~~

~~The~~exists, the entity will work with the Regional Entity designated as its CEA to submit the Generator Cold Weather Constraint, with supporting documentation, to the ~~ERO Enterprise~~CEA for review, evaluation, ~~approval (as needed),~~ and validation or approval as outlined in this process.

The entity submitting the Generator Cold Weather Constraint(s) will be referred to as the 'submitting entity' and may represent itself or multiple registered entities under the same ownership with the same Generator Cold Weather Constraint. The submitting entity is responsible for ensuring all registered entities included are listed in the requested information and is for distributing any communications from its CEA to the other entities that are part of the Generator Cold Weather Constraint. If a Generator Cold Weather Constraint is submitted for multiple registered entities under the same ownership who have different Regional Entities designated as the CEA, the submitting entity's CEA will perform the steps outlined in this process and will be responsible for coordinating with the Regional Entity(ies) that are the designated CEA for the additional entities party to the Generator Cold Weather Constraint.

For entities in Coordinated Oversight, the CEA for this process is the Lead Regional Entity (LRE). The LRE will coordinate with the Affected Regional Entity(ies) (ARE) and the AREs may participate in the joint review as well.

Step 1 – Registered Entity Submittal

If an entity determines that it meets the required Generator Cold Weather Constraint language within Attachment 1, the submitting entity will ~~contact their CEA to coordinate submittal of the Generator Cold Weather Constraint. The submitting entity will~~ submit the requisite data to their CEA through Align and the Secure Evidence Locker or other process tools as ~~determined~~directed by the CEA.

Entities are encouraged to submit the Generator Cold Weather Constraint as soon as they are aware they will meet the Generator Cold Weather Constraint language within Attachment 1 but are required to meet EOP-012-3 Requirement R8[4]. Early submittal is requested to allow the ~~ERO Enterprise~~CEA time to review, evaluate, and validate or approve the Generator Cold Weather Constraint.

If an entity determines a Generator Cold Weather Constraint is required for a unit, then subsequently has another unit that requires declaration of the same Generator Cold Weather Constraint (e.g., the same issue occurred at another location with implementing a freeze protection measure) an update to the original Generator Cold Weather Constraint is allowed. Note that supporting information for the other site is needed and the submittal/review timelines (per Requirement R8 and this process) will remain the same for the "new" addition. This will allow a Generator Owner to perform the 36-calendar month review of the Generator Cold Weather Constraint for both instances at the same time.

It is the submitting entity's responsibility to ensure that all information detailed in EOP-012-3 R8 and Attachment 1 is provided in the entity's submittal to facilitate the ~~ERO Enterprise~~CEA review. The submitting entity should review language within Attachment 1 and identify, in the submittal, if the Generator Cold Weather Constraint is a ~~pre-approved~~known Generator Cold Weather Constraint or a Generator Cold Weather Constraint requiring further review for approval.

Step 2 – ERO Enterprise Review

The CEA will acknowledge receipt of the submission in writing (either through Align or email) within 15 ~~business~~calendar days and verify that all information detailed in EOP-012-3 R8 and Attachment 1 is provided in the submitting entity's submittal. The CEA will work with the submitting entity to provide any missing information. The CEA will notify NERC of the Generator Cold Weather Constraint submittal (either through Align or via email) when acknowledging receipt of the submission.

[4] Per EOP-012-3 R8.1, the Generator Owner must submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable for in-service units. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, the Generator Owner must submit the Generator Cold Weather Constraint declaration(s) no later than 15 calendar days after commercial operation.

The CEA will review the Generator Cold Weather Constraint submittal and supporting information[5]. Any additional information requested to support the Generator Cold Weather Constraint review, evaluation, and validation or approval will be coordinated with the submitting entity by the CEA. The CEA will complete the review within 10 ~~business~~ calendar days of submittal receipt confirmation for ~~pre-approved~~known Generator Cold Weather Constraint and 45 ~~business~~calendar days of submittal receipt confirmation for those Generator Cold Weather Constraint requiring further review for approval or provide notification to the submitting entity that they are extending the time needed to review[6].

The determination whether to approve the case-by-case Generator Cold Weather Constraint will be based on the specific facts and circumstances provided by the submitting entity that defends and supports the declared constraint under ~~one of~~ the ~~five~~ identified situations in EOP-012-3 Attachment 1.

Step 3 – Registered Entity Notification

The CEA will communicate the validation, approval, or denial of the Generator Cold Weather Constraint or continuation of the time needed to review the Generator Cold Weather Constraint in writing (via Align or email) to the submitting entity including the rationale for the determination. For any continuation of the review, the CEA will also provide the submitting entity with a revised timeline for when the determination will be provided. Denial of a Generator Cold Weather Constraint requires the entity to update its ~~Corrective Action Plan~~CAP~~(~~s~~)~~ with corrective actions that will be completed within the timetables in Requirement R6 Part 6.~~1~~3 or Requirement R7 Part 7.1 to begin from the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid. Communication efforts between the submitting entity and the CEA related to updates of the ~~Corrective Action Plan~~CAP and timetables resulting from a denial of a Generator Cold Weather Constraint are strongly encouraged.

If a Generator Cold Weather Constraint was denied, the submitting entity may request, within five (5) calendar days of denial, a joint NERC and CEA review of the denial. The joint review should take no longer than 10 calendar days (subject to the information and resources available.) NERC and the CEA will evaluate the information provided and the submitting entity will be notified of the determination.

Step 4 – Reporting to NERC

Quarterly, the CEA will ~~send~~provide NERC a report that, at a minimum, includes each Generator Cold Weather Constraint request received, whether the request was validated, approved, or denied, and the CEA's rationale for its decision.

[5] NERC may choose to participate in any review at its own discretion or at the request of the CEA.

[6] If a large number of entities submit Generator Cold Weather Constraints at the same time (especially those tied to initial performance expectations as set in the EOP-012-3 Implementation Plan), the ERO Enterprise anticipates additional time will be needed to accommodate these initial reviews.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Calculating Extreme Cold Weather Temperature

RELIABILITY | RESILIENCE | SECURITY




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Atlanta, GA 30326
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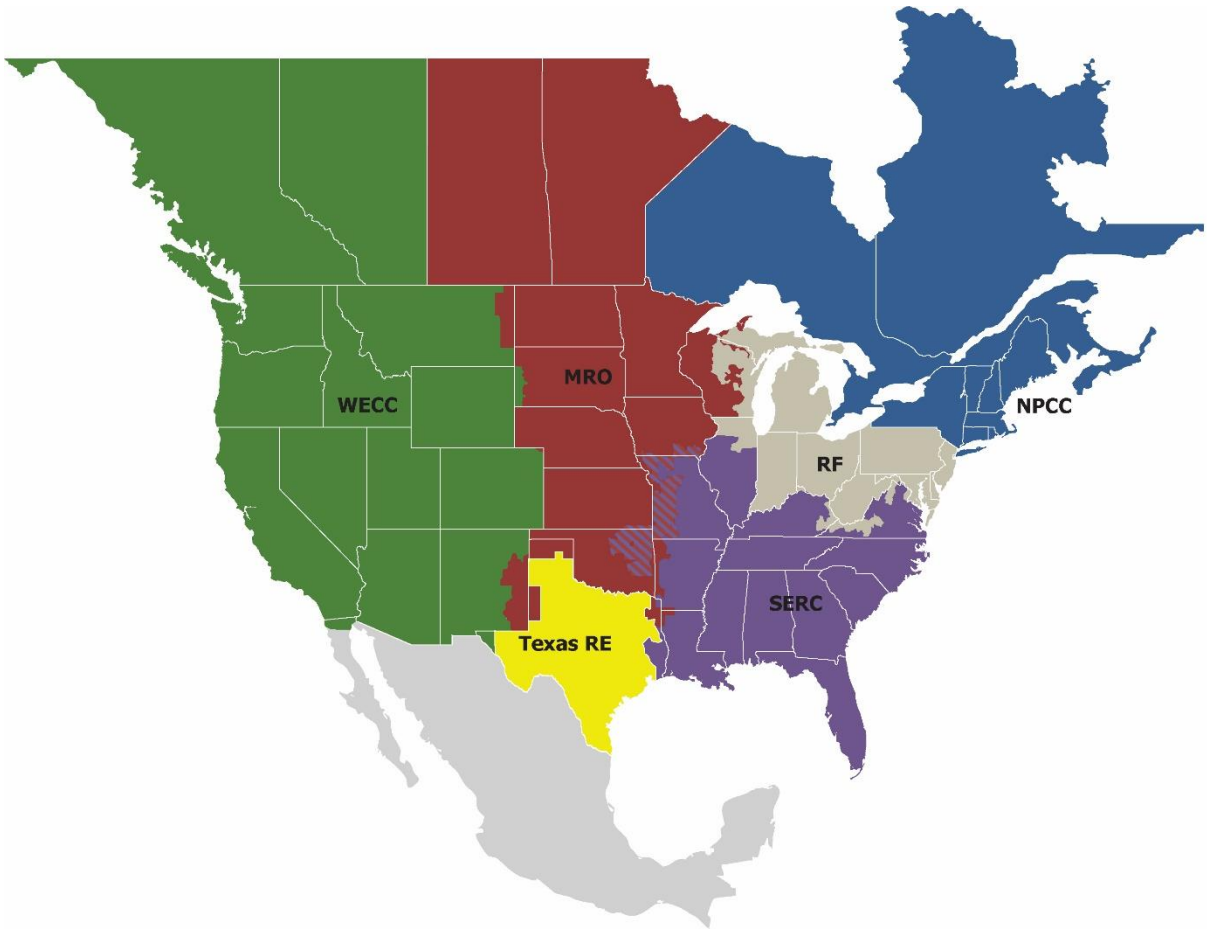
Preface

Electricity is a key component of the fabric of modern society and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of NERC and the six Regional Entities, is a highly reliable, resilient, and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

Reliability | Resilience | Security
Because nearly 400 million citizens in North America are counting on us

The North American BPS is made up of six Regional Entity boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one Regional Entity while associated Transmission Owners/Operators participate in another.



MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	WECC

Introduction

This document demonstrates two methods for acquiring data for a given location and a method of performing the statistical analysis of the data to determine the Extreme Cold Weather Temperature (ECWT) for a given location. These examples are focused on United States and will use data obtained from NOAA's Climate Data Online database and Automated Surface Observing Systems (ASOS). Performance of the statistical analysis with Microsoft Excel is demonstrated as well. The method shown in this document only shows the collection of data and two methods of analyzing this data, both using Microsoft Excel. Note that other data sources may be available for use. Although not addressed here, offshore installations may be able to use National Data Buoy Center (noaa.gov) but data is limited. It is understood that a complete single source data set may not always be available due to a variety of reasons. There may be ways to gather a more complete data set than described below. Document your approach when identifying and addressing suspect data.

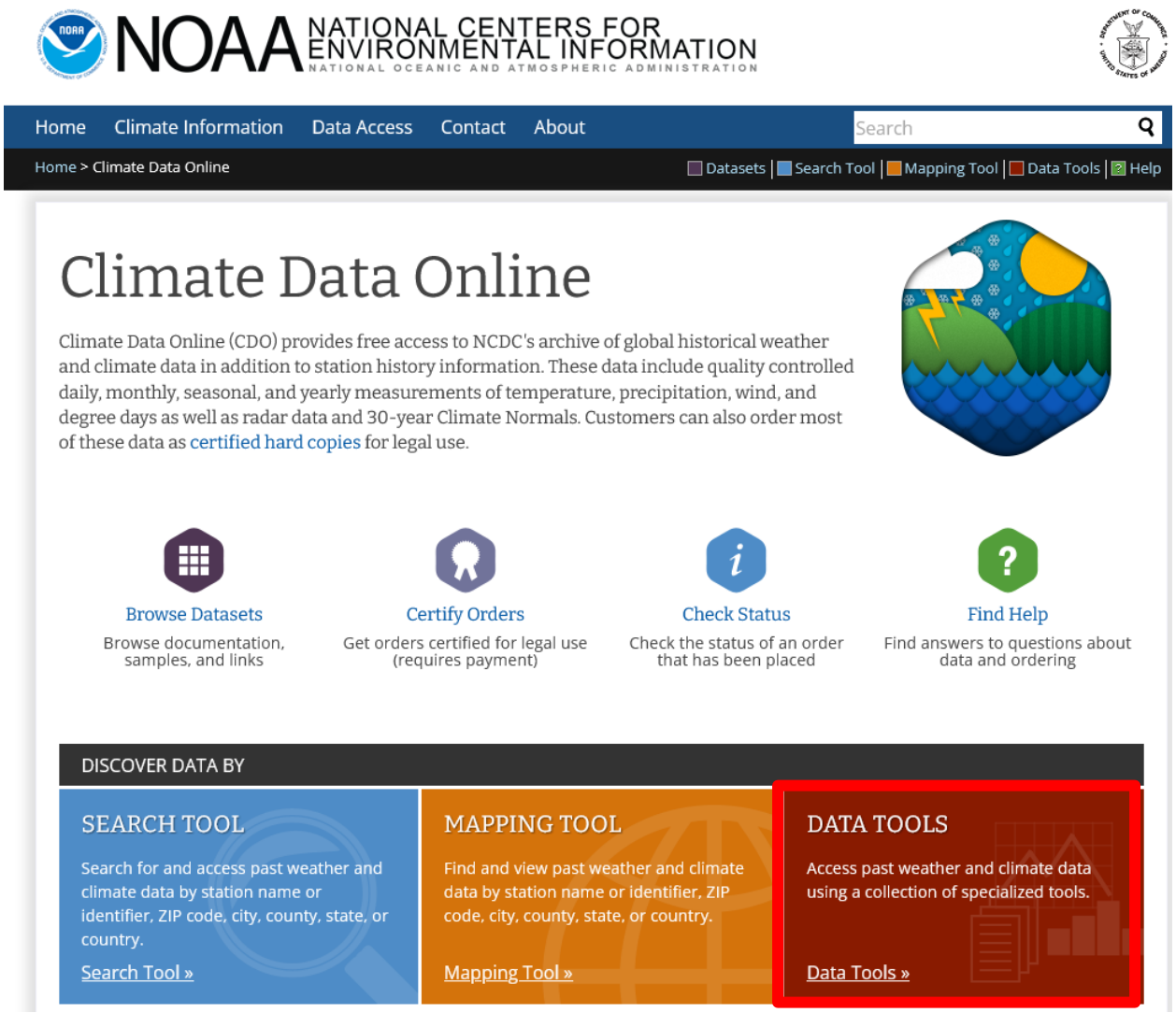
It is understood that the entity may very well have an overall approach to missing data versus a unit-by-unit approach. By the nature of the percentile function, significant data loss may not change the ECWT value. The key is where the data is missing in relationship to the ECWT calculated value. Missing hourly temperature values above the ECWT has limited impact to the calculation. However, missing hourly temperature values at or below the likely ECWT can impact the ECWT calculated value. For example, the .2 percentile of 50,000 hourly values equates to 100 hourly values (in this case the lowest recorded hourly temperatures.) If there are missing hourly values that would have likely been included in the list of 100 values, had they been available, the entity should explain how it accounted for those missing values. Missing data in the 100 values effectively has the potential of moving the ECWT value higher, but that is very dependent upon the data set. In either case, the entity should document how it accounted for missing values to calculate an ECWT that is representative for the location.

Determination of Location's Extreme Cold Weather Temperature

Gathering Data From NOAA

Navigate to [https://www.ncdc.noaa.gov/cdo-web/.](https://www.ncdc.noaa.gov/cdo-web/)

1. Select **Data Tools.**



2. Scroll down if necessary and select **Local Climatological Data (LCD).**

Find a Station

Locate weather observing stations using a variety of parameters such as address, ZIP code, date, and data type with filters by observation type

Select a Location

Order data by weather observing stations or by geographic locations using a simplified drill-down interface with data from U.S. and other countries

Search Within a Single Dataset

The following search tools access data from within a specific dataset. Use these tools to view or order data from within each respectiv dataset. Data will be in a more standard format across stations or locations.

Climate Normals

View temperature and precipitation Climate Normals for over 9,800 stations across the United States and a selection of other territories

Daily Weather Records

Access summaries of recent global and U.S. daily weather records with options to view monthly, annual, all-time or selected records

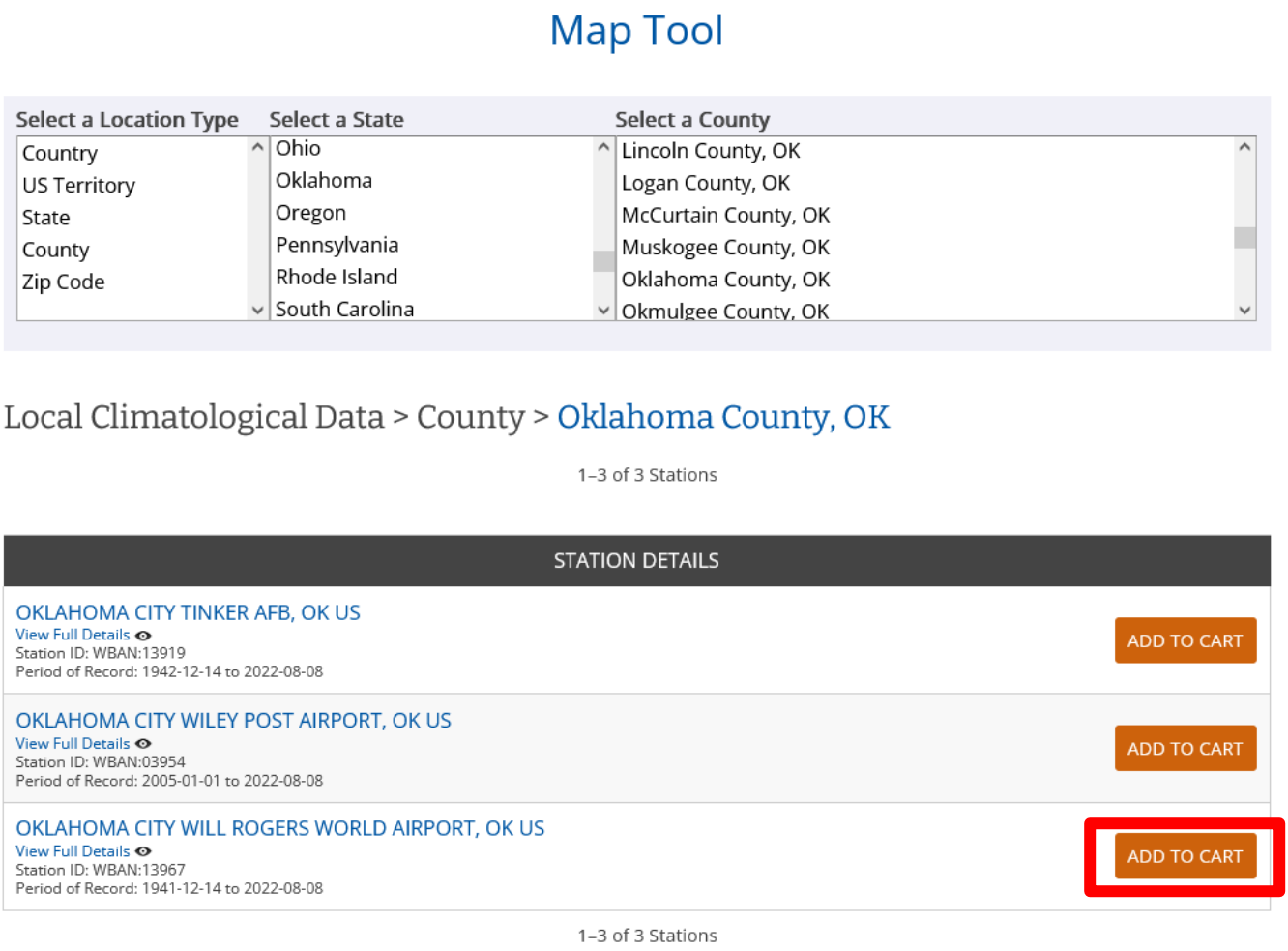
Local Climatological Data (LCD)

View and order hourly, daily, and monthly data from nearly 2400 locations within the U.S., surrounding territories, and other selected areas

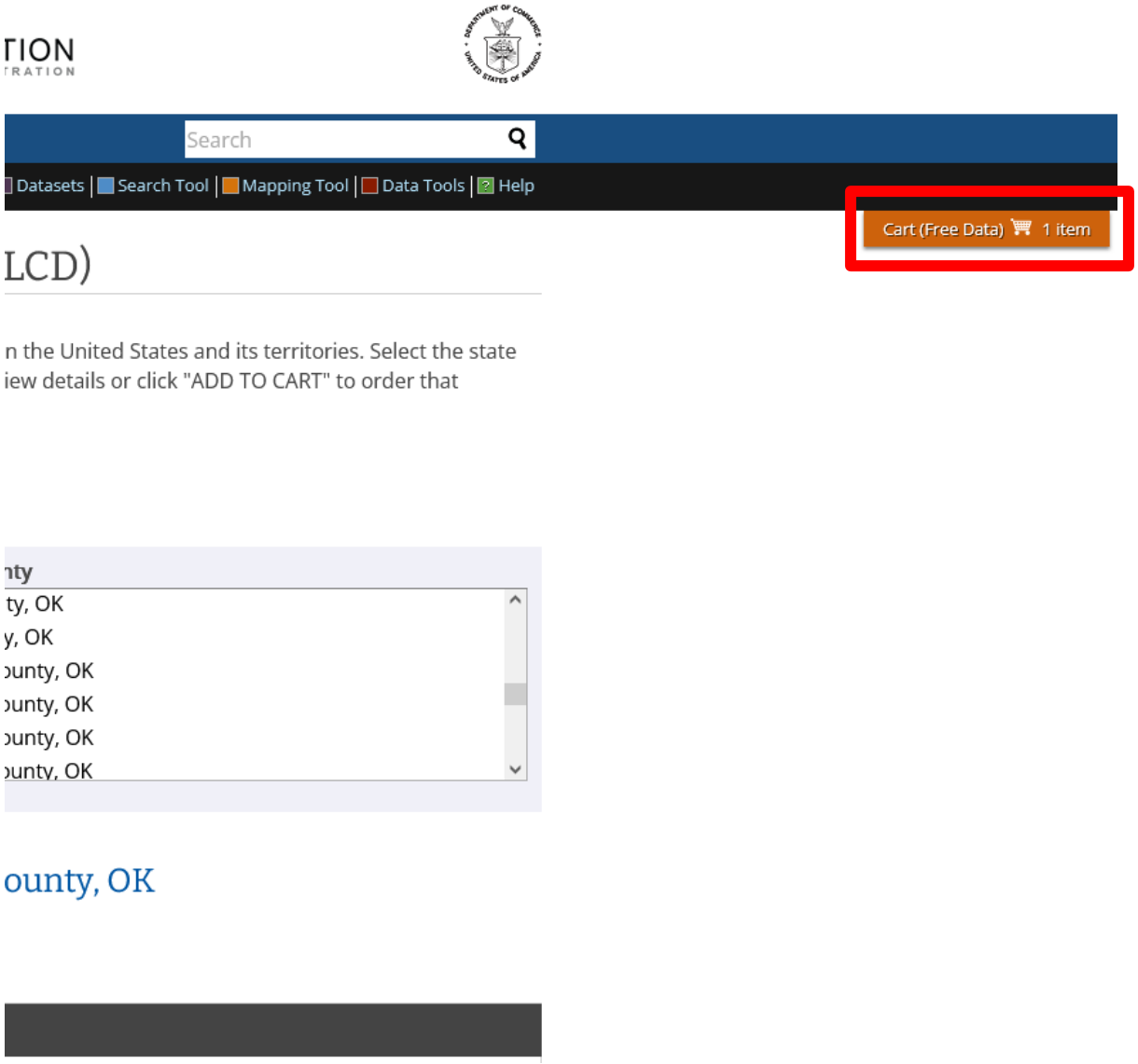
Marine Data

View and order historical marine data which is comprised of ship, buoy, and platform observations from 1662 to present.

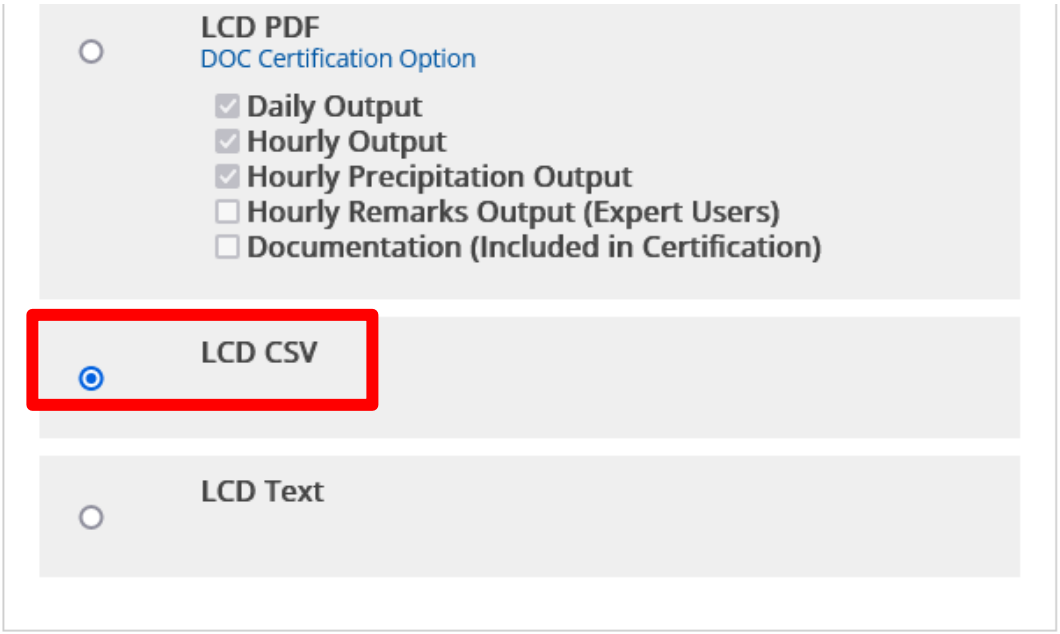
3. Use the selection tool to find a weather station appropriate for your location and click **ADD TO CART**.

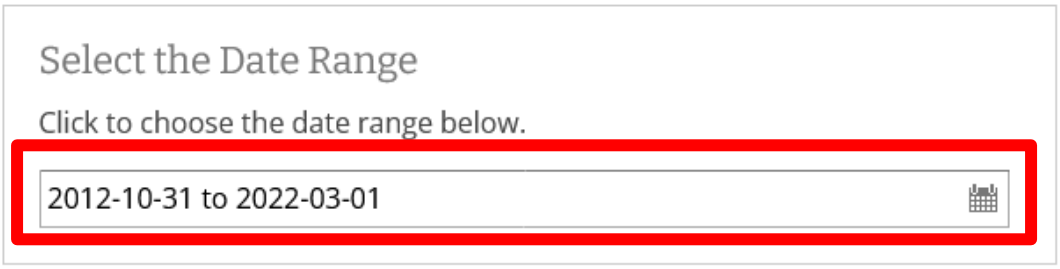


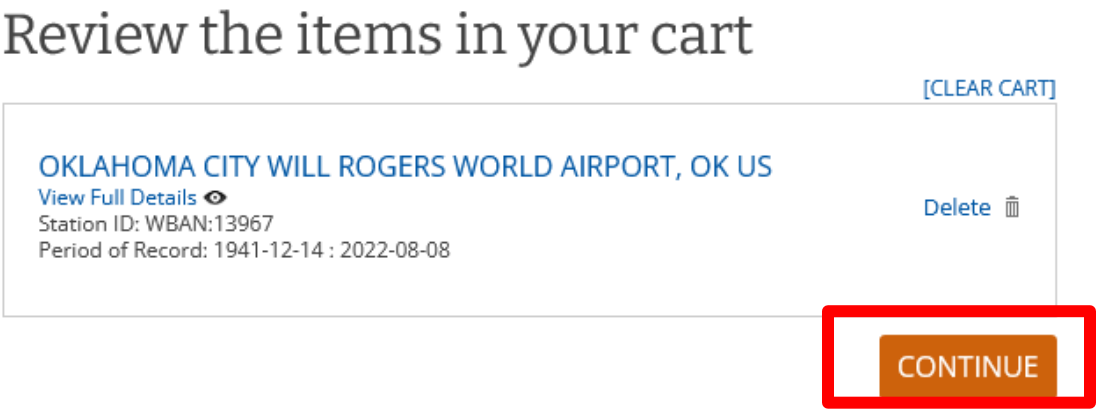
4. Click on the **cart icon** in the upper right-hand portion of the page.



5. Select LCD CSV, your desired date range, and then click continue. (Note: date ranges must be less than 10 years, so this process might have to be repeated several times and multiple files combined into one in order to get all data necessary to perform the analysis to determine the Extreme Cold Weather Temperature)







6. Enter and verify your email address and click **Submit Order.** You will receive an email when your request has been processed and is ready to download.

REQUESTED DATA REVIEW	
Dataset	Local Climatological Data
Order Start Date	2012-10-31 00:00
Order End Date	2022-03-01 23:59
Output Format	LCD CSV
Stations/Locations	OKLAHOMA CITY WILL ROGERS WORLD AIRPORT, OK US (Station ID: WBAN:13967)

Enter email address

Please enter your email address. This is the address to which your data links and information regarding this order will be sent. Please read NOAA's Privacy Policy if you have any concerns.

Email Address

email@address.com

Verify Email Address

email@address.com

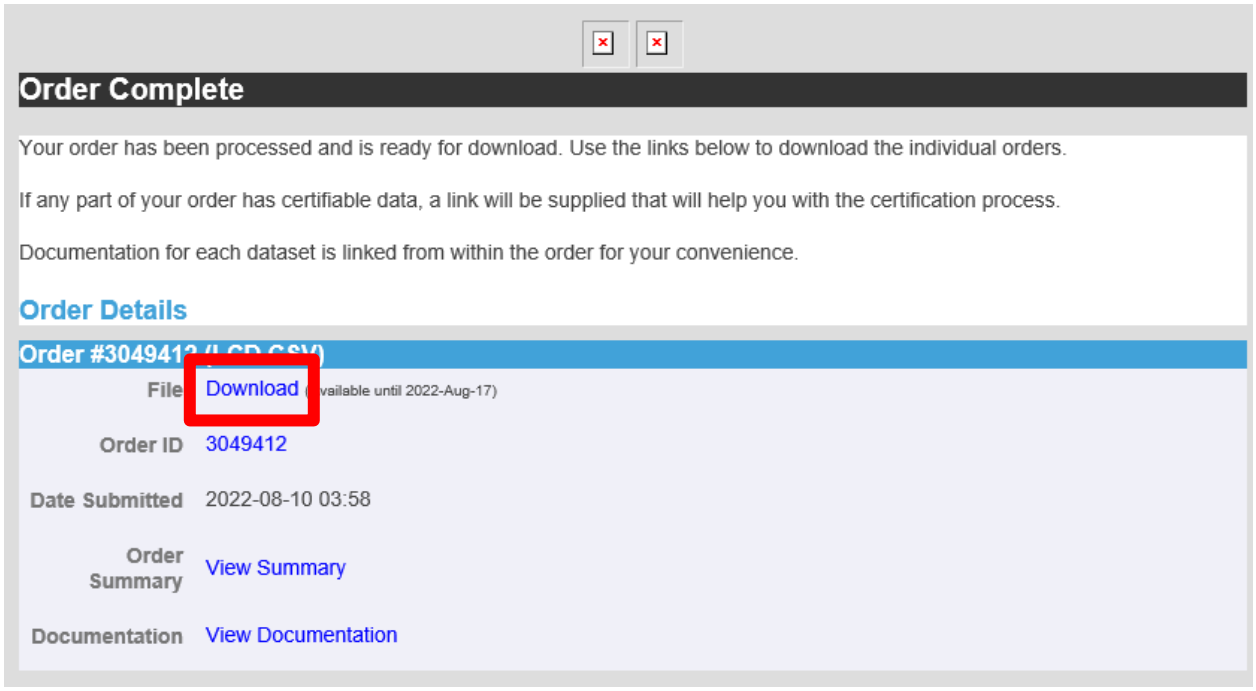
Remember my email address

[Uncheck to forget]

NOAA will not share your email address with anyone. The email address will not be used for any purpose other than communicating the order status.

EDIT ORDER SUBMIT ORDER

7. Click **Download** in the email that you will receive from NOAA to download your dataset.



Analyzing the Data

Option 1

1. Open the .csv file that was downloaded using the previous steps (and combine with other .csv files as necessary to cover the required date range).

2. Add filters to the first row and filter on "Report Type", Column C, to only show report type FM-15, this is the standard METAR data.

STATION	DATE	REPOR	SOURCI	AWND	Backup	Backup	Backup	Backup	Backup	Backup	Backup	Backup
72353013967	2012-10-31T00:52:00	FM-15	7									
72353013967	2012-10-31T01:52:00	FM-15	7									
72353013967	2012-10-31T02:52:00	FM-15	7									
72353013967	2012-10-31T03:52:00	FM-15	7									
72353013967	2012-10-31T04:52:00	FM-15	7									
72353013967	2012-10-31T05:52:00	FM-15	7									
72353013967	2012-10-31T06:52:00	FM-15	7									
72353013967	2012-10-31T07:52:00	FM-15	7									
72353013967	2012-10-31T08:52:00	FM-15	7									
72353013967	2012-10-31T09:52:00	FM-15	7									
72353013967	2012-10-31T10:52:00	FM-15	7									
72353013967	2012-10-31T11:52:00	FM-15	7									
72353013967	2012-10-31T12:52:00	FM-15	7									
72353013967	2012-10-31T13:52:00	FM-15	7									
72353013967	2012-10-31T14:52:00	FM-15	7									
72353013967	2012-10-31T15:52:00	FM-15	7									
72353013967	2012-10-31T16:52:00	FM-15	7									
72353013967	2012-10-31T17:52:00	FM-15	7									
72353013967	2012-10-31T18:52:00	FM-15	7									
72353013967	2012-10-31T19:52:00	FM-15	7									
72353013967	2012-10-31T20:52:00	FM-15	7									
72353013967	2012-10-31T21:52:00	FM-15	7									
72353013967	2012-10-31T22:52:00	FM-15	7									
72353013967	2012-10-31T23:52:00	FM-15	7									
72353013967	2012-11-01T00:52:00	FM-15	7									
72353013967	2012-11-01T01:52:00	FM-15	7									
72353013967	2012-11-01T02:52:00	FM-15	7									
72353013967	2012-11-01T03:52:00	FM-15	7									
72353013967	2012-11-01T04:52:00	FM-15	7									
72353013967	2012-11-01T05:52:00	FM-15	7									

3. Select the Date column (Column B), by clicking on the column, scroll over to the Hourly Dry Bulb Temperature column, Column AS, and holding down the CTRL key, select that column. Copy and paste both columns into a new sheet named "Clean and Filter".

DATE	HourlyDryBulbTemperature		
2012-10-31T00:52:00	52		
2012-10-31T01:52:00	51		
2012-10-31T02:52:00	50		
2012-10-31T03:52:00	47		
2012-10-31T04:52:00	46		
2012-10-31T05:52:00	46		
2012-10-31T06:52:00	44		
2012-10-31T07:52:00	48		
2012-10-31T08:52:00	52		
2012-10-31T09:52:00	57		
2012-10-31T10:52:00	61		
2012-10-31T11:52:00	65		
2012-10-31T12:52:00	67		
2012-10-31T13:52:00	68		
2012-10-31T14:52:00	71		
2012-10-31T15:52:00	71		
2012-10-31T16:52:00	70		
2012-10-31T17:52:00	66		
2012-10-31T18:52:00	62		
2012-10-31T19:52:00	59		
2012-10-31T20:52:00	54		
2012-10-31T21:52:00	51		
2012-10-31T22:52:00	52		
2012-10-31T23:52:00	52		
2012-11-01T00:52:00	53		

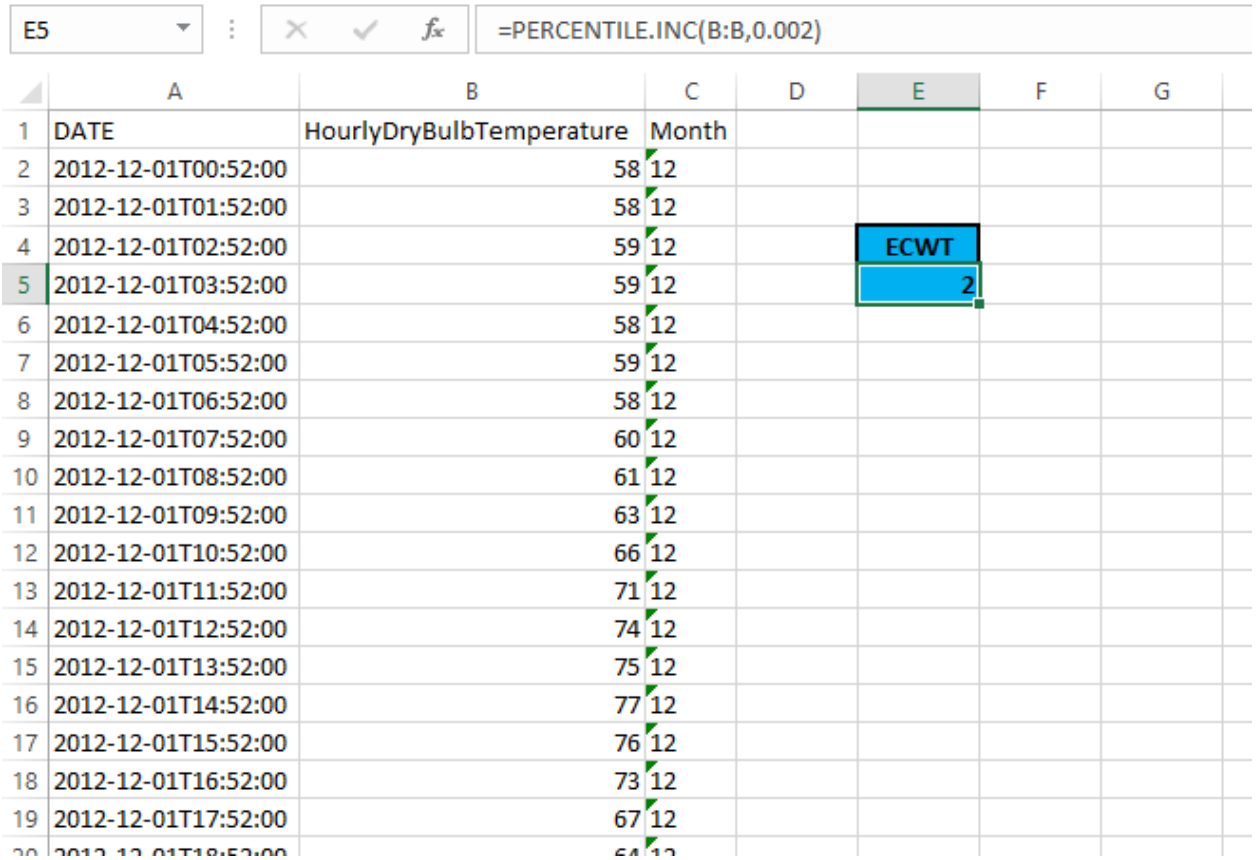
4. Using the data on the "Clean and Filter" sheet, type **Month** in Column C1, type the formula "=mid(A2,6,2)" in cell C2, and copy that formula in Column C to the last row of the data set. Then Filter month to only show months 1, 2, 12 (January, February, and December).

5. You can then filter by Hourly Dry Bulb Temperature (Column B) to find and address bad data as appropriate. Bad data may consist of corrupt or missing values. It is beneficial to document information about the bad data to support the calculation of ECWT. If there are other sources that are similar to the source selected that has more complete data or the data can be used, consider that option and document accordingly. If there is but a single source of data (e.g., available in NWS info, but not ASOS), and that data source is considered the technically best information, use it accordingly with appropriate documentation. It is understood that complete single source data sets may not be the norm due to a variety of reasons - technology, monitoring did not exist for a certain timeframe, maintenance on monitoring devices, failure to record, instrument failure, instrument testing, etc. You may not have the reason for the corrupt or missing data and documenting the raw data and its source is recommended. Exercise due diligence when calculating the ECWT, as missing data can be critical to effective derivation of the value, and is needed to determine "adequacy". Now Select, Copy, and Paste the remaining data to a new sheet named ECWT.

	A	B	C	D
1	DATE	HourlyDryBulbTemperatur	Month	
747	2012-12-01T00:52:00	58	12	
748	2012-12-01T01:52:00	58	12	
749	2012-12-01T02:52:00	59	12	
750	2012-12-01T03:52:00	59	12	
751	2012-12-01T04:52:00	58	12	
752	2012-12-01T05:52:00	59	12	
753	2012-12-01T06:52:00	58	12	
754	2012-12-01T07:52:00	60	12	
755	2012-12-01T08:52:00	61	12	
756	2012-12-01T09:52:00	63	12	
757	2012-12-01T10:52:00	66	12	
758	2012-12-01T11:52:00	71	12	
759	2012-12-01T12:52:00	74	12	
760	2012-12-01T13:52:00	75	12	
761	2012-12-01T14:52:00	77	12	
762	2012-12-01T15:52:00	76	12	
763	2012-12-01T16:52:00	73	12	
764	2012-12-01T17:52:00	67	12	
765	2012-12-01T18:52:00	64	12	
766	2012-12-01T19:52:00	63	12	
767	2012-12-01T20:52:00	58	12	
768	2012-12-01T21:52:00	61	12	
769	2012-12-01T22:52:00	52	12	
770	2012-12-01T23:52:00	50	12	
771	2012-12-02T00:52:00	48	12	
772	2012-12-02T01:52:00	46	12	
773	2012-12-02T02:52:00	45	12	
774	2012-12-02T03:52:00	43	12	
775	2012-12-02T04:52:00	44	12	
776	2012-12-02T05:52:00	43	12	

6. Using Excel's built in Percentile function, the ECWT can now be determined. While on the ECWT sheet, in a blank cell use the function "=PERCENTILE.INC()" and select all temperature data in Column B (Hourly Dry Bulb Temperature) on the "ECWT" sheet and use 0.002 for the percentile value. The formula will look similar to this, "=PERCENTILE.INC(B:B,0.002)" (using 0.002 for the second argument in this function returns the two-tenths percentile temperature of the hourly temperatures measured in the dataset used).

   <u>This value should be representative of the ECWT based on the given dataset.</u>

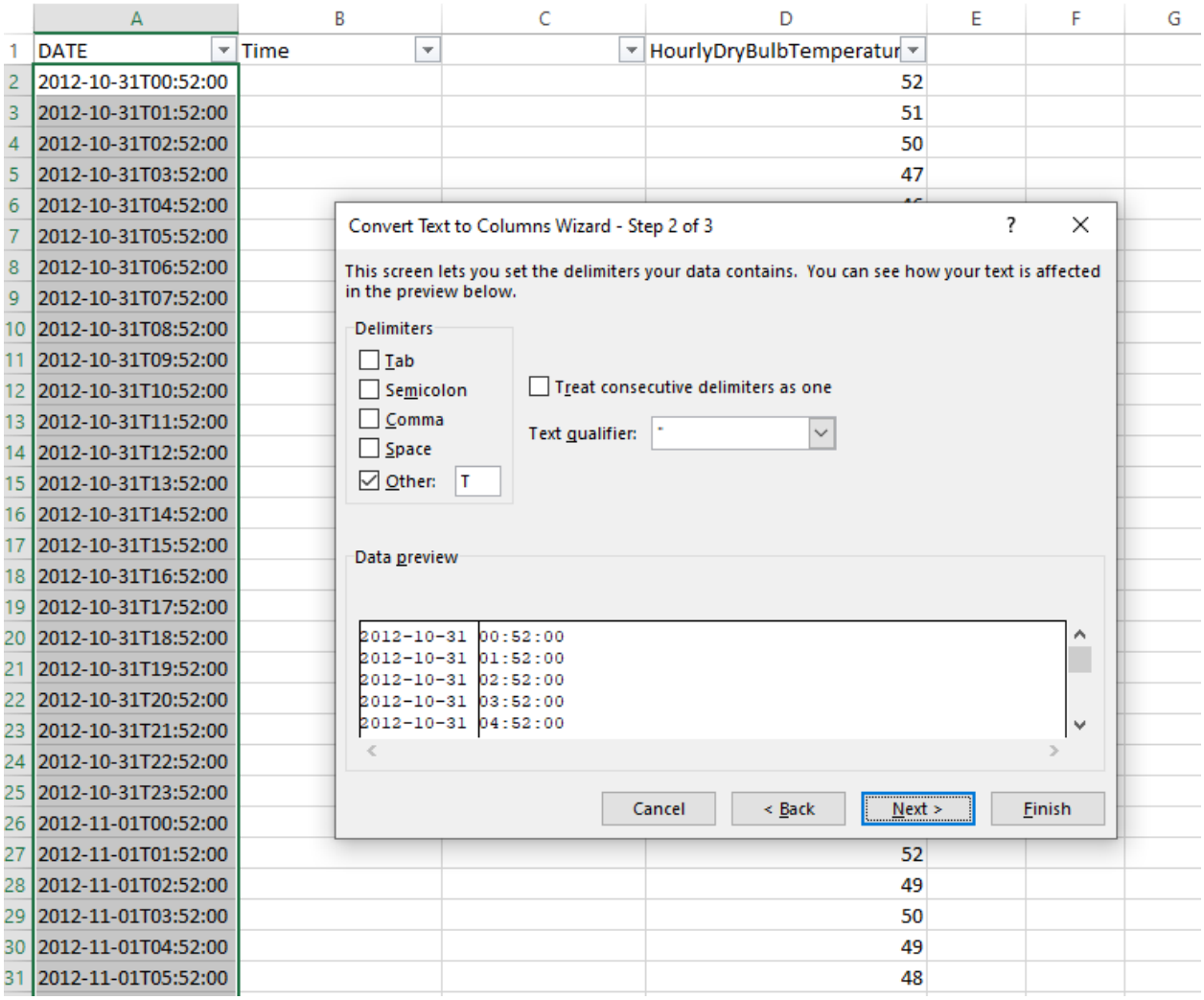


	A	B	C	D	E	F	G
1	DATE	HourlyDryBulbTemperature	Month				
2	2012-12-01T00:52:00	58	12				
3	2012-12-01T01:52:00	58	12				
4	2012-12-01T02:52:00	59	12		ECWT		
5	2012-12-01T03:52:00	59	12		2		
6	2012-12-01T04:52:00	58	12				
7	2012-12-01T05:52:00	59	12				
8	2012-12-01T06:52:00	58	12				
9	2012-12-01T07:52:00	60	12				
10	2012-12-01T08:52:00	61	12				
11	2012-12-01T09:52:00	63	12				
12	2012-12-01T10:52:00	66	12				
13	2012-12-01T11:52:00	71	12				
14	2012-12-01T12:52:00	74	12				
15	2012-12-01T13:52:00	75	12				
16	2012-12-01T14:52:00	77	12				
17	2012-12-01T15:52:00	76	12				
18	2012-12-01T16:52:00	73	12				
19	2012-12-01T17:52:00	67	12				

Option 2

These next few steps demonstrate how to view the distribution of temperatures from the data set and obtain the ECWT by a slightly different method.

1. On the "Clean and Filter" sheet, insert two new columns between Column A and Column B. Select Column A and use Excel's *Text to Columns* feature and selected the delimited option and use the letter "T" to split the date data into a date component and a time component by hitting "Next" and "Finish". (Note: You can also do a "Find and Replace, finding the letter T and replacing it with a space to change the information in the Date column to a numerical value that can then be used for calculations.)

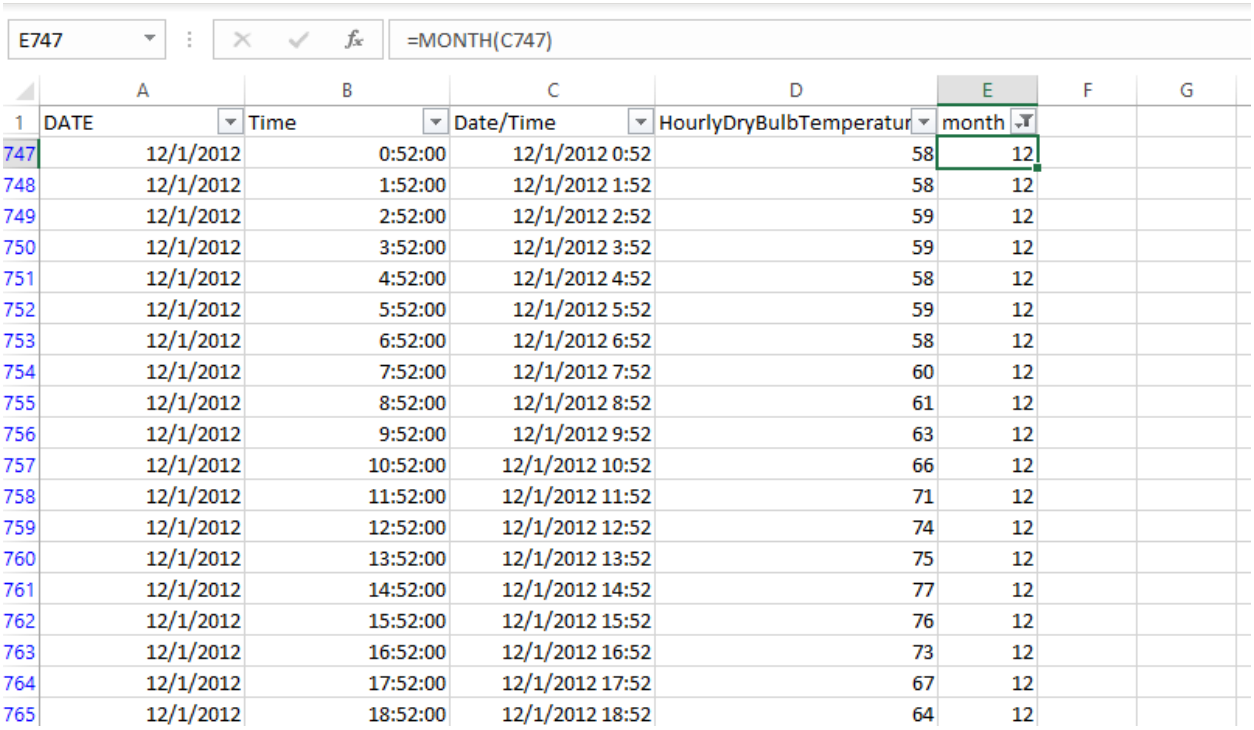


2. Add in Column C, add the date in Column A to time in Column B, and copy this formula for all rows of the data set.

C2 =A2+B2

	A	B	C	D
1	DATE	Time	Date/Time	HourlyDryBulbTemperatur
2	10/31/2012	0:52:00	10/31/2012 0:52	52
3	10/31/2012	1:52:00	10/31/2012 1:52	51
4	10/31/2012	2:52:00	10/31/2012 2:52	50
5	10/31/2012	3:52:00	10/31/2012 3:52	47
6	10/31/2012	4:52:00	10/31/2012 4:52	46
7	10/31/2012	5:52:00	10/31/2012 5:52	46
8	10/31/2012	6:52:00	10/31/2012 6:52	44
9	10/31/2012	7:52:00	10/31/2012 7:52	48
10	10/31/2012	8:52:00	10/31/2012 8:52	52
11	10/31/2012	9:52:00	10/31/2012 9:52	57
12	10/31/2012	10:52:00	10/31/2012 10:52	61
13	10/31/2012	11:52:00	10/31/2012 11:52	65
14	10/31/2012	12:52:00	10/31/2012 12:52	67
15	10/31/2012	13:52:00	10/31/2012 13:52	68
16	10/31/2012	14:52:00	10/31/2012 14:52	71
17	10/31/2012	15:52:00	10/31/2012 15:52	71
18	10/31/2012	16:52:00	10/31/2012 16:52	70
19	10/31/2012	17:52:00	10/31/2012 17:52	66
20	10/31/2012	18:52:00	10/31/2012 18:52	62
21	10/31/2012	19:52:00	10/31/2012 19:52	59
22	10/31/2012	20:52:00	10/31/2012 20:52	54
23	10/31/2012	21:52:00	10/31/2012 21:52	51

3. Type Month in cell E1, and in cell E2 use the formula "=month(C2)". Copy the formula for all rows of the data set, then filter based on month, only selecting 1,2,12 for the desired months. Then copy remaining data from Column C and Column D to a sheet named Histogram.



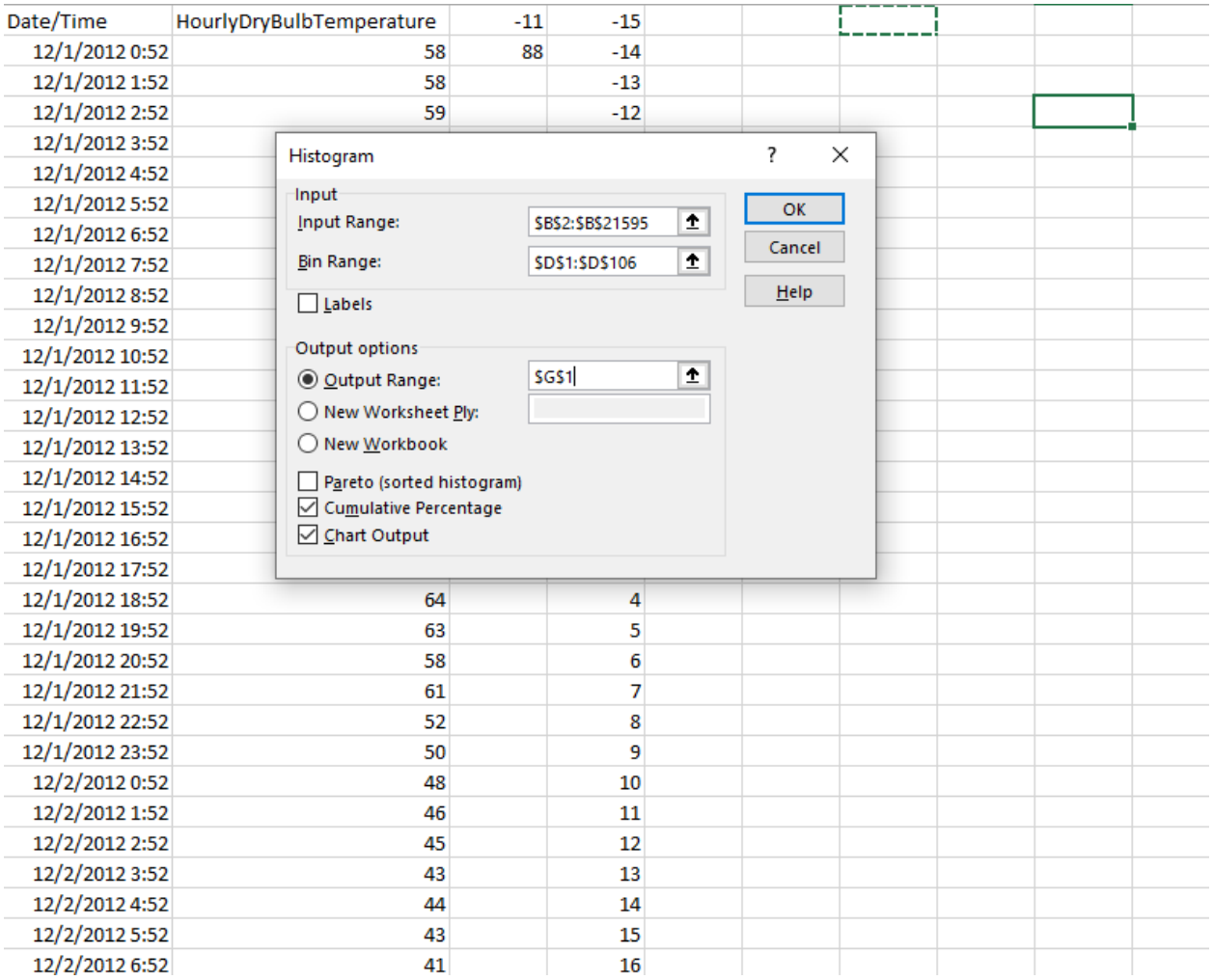
E747 =MONTH(C747)

	A	B	C	D	E	F	G
1	DATE	Time	Date/Time	HourlyDryBulbTemperatur	month		
747	12/1/2012	0:52:00	12/1/2012 0:52	58	12		
748	12/1/2012	1:52:00	12/1/2012 1:52	58	12		
749	12/1/2012	2:52:00	12/1/2012 2:52	59	12		
750	12/1/2012	3:52:00	12/1/2012 3:52	59	12		
751	12/1/2012	4:52:00	12/1/2012 4:52	58	12		
752	12/1/2012	5:52:00	12/1/2012 5:52	59	12		
753	12/1/2012	6:52:00	12/1/2012 6:52	58	12		
754	12/1/2012	7:52:00	12/1/2012 7:52	60	12		
755	12/1/2012	8:52:00	12/1/2012 8:52	61	12		
756	12/1/2012	9:52:00	12/1/2012 9:52	63	12		
757	12/1/2012	10:52:00	12/1/2012 10:52	66	12		
758	12/1/2012	11:52:00	12/1/2012 11:52	71	12		
759	12/1/2012	12:52:00	12/1/2012 12:52	74	12		
760	12/1/2012	13:52:00	12/1/2012 13:52	75	12		
761	12/1/2012	14:52:00	12/1/2012 14:52	77	12		
762	12/1/2012	15:52:00	12/1/2012 15:52	76	12		
763	12/1/2012	16:52:00	12/1/2012 16:52	73	12		
764	12/1/2012	17:52:00	12/1/2012 17:52	67	12		
765	12/1/2012	18:52:00	12/1/2012 18:52	64	12		

4. On the Histogram sheet, enter "=min(B:B)" in cell C1, and "=max(B:B)" in cell C2. This will give you the minimum and maximum temperatures in the dataset. We will use the temperatures to set ranges for this histogram. In Column D start with a value, a few degrees below the min, then list every degree to a few degrees above the max.

Date/Time	HourlyDryBulbTemperature	-11	-15	
12/1/2012 0:52	58	88	-14	
12/1/2012 1:52	58		-13	
12/1/2012 2:52	59		-12	
12/1/2012 3:52	59		-11	
12/1/2012 4:52	58		-10	
12/1/2012 5:52	59		-9	
12/1/2012 6:52	58		-8	
12/1/2012 7:52	60		-7	
12/1/2012 8:52	61		-6	
12/1/2012 9:52	63		-5	
12/1/2012 10:52	66		-4	
12/1/2012 11:52	71		-3	
12/1/2012 12:52	74		-2	
12/1/2012 13:52	75		-1	
12/1/2012 14:52	77		0	
12/1/2012 15:52	76		1	
12/1/2012 16:52	73		2	
12/1/2012 17:52	67		3	
12/1/2012 18:52	64		4	
12/1/2012 19:52	63		5	
12/1/2012 20:52	58		6	
12/1/2012 21:52	61		7	
12/1/2012 22:52	52		8	
12/1/2012 23:52	50		9	
12/2/2012 0:52	48		10	
12/2/2012 1:52	46		11	
12/2/2012 2:52	45		12	
12/2/2012 3:52	43		13	
12/2/2012 4:52	44		14	
12/2/2012 5:52	43		15	
12/2/2012 6:52	41		16	
12/2/2012 7:52	38		17	
12/2/2012 8:52	44		18	

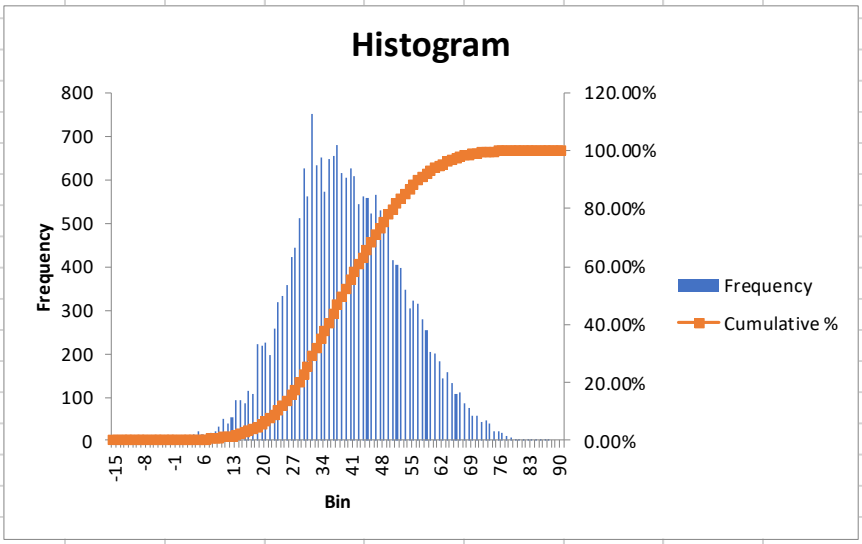
5. In the Data Analysis ToolPak in excel, select histogram. Select all dry bulb temperatures for your Input Range. Select all the Temperatures in Column D for our Bin Range. Select an empty cell for your Output Range. Check the Cumulative Percentage and Chart Output boxes.



Date/Time	HourlyDryBulbTemperature	-11	-15
12/1/2012 0:52	58	88	-14
12/1/2012 1:52	58		-13
12/1/2012 2:52	59		-12
12/1/2012 3:52			
12/1/2012 4:52			
12/1/2012 5:52			
12/1/2012 6:52			
12/1/2012 7:52			
12/1/2012 8:52			
12/1/2012 9:52			
12/1/2012 10:52			
12/1/2012 11:52			
12/1/2012 12:52			
12/1/2012 13:52			
12/1/2012 14:52			
12/1/2012 15:52			
12/1/2012 16:52			
12/1/2012 17:52			
12/1/2012 18:52	64		4
12/1/2012 19:52	63		5
12/1/2012 20:52	58		6
12/1/2012 21:52	61		7
12/1/2012 22:52	52		8
12/1/2012 23:52	50		9
12/2/2012 0:52	48		10
12/2/2012 1:52	46		11
12/2/2012 2:52	45		12
12/2/2012 3:52	43		13
12/2/2012 4:52	44		14
12/2/2012 5:52	43		15
12/2/2012 6:52	41		16

6. The output from this will provide a listing of percentile rankings for the listed temperatures, as well as a graph output of the distribution of temperatures contained in this dataset. The "Bin" column shows the temperature, "Frequency" shows how many times that temperature occurred within the dataset, and "Cumulative %" shows the percentile ranking for each temperature. Choose the temperature at or closest to the 0.2 percentile level.

Bin	Frequency	umulative %
-15	0	0.00%
-14	0	0.00%
-13	0	0.00%
-12	0	0.00%
-11	1	0.00%
-10	0	0.00%
-9	2	0.01%
-8	0	0.01%
-7	1	0.02%
-6	4	0.04%
-5	4	0.06%
-4	4	0.07%
-3	1	0.08%
-2	4	0.10%
-1	6	0.13%
0	5	0.15%
1	3	0.16%
2	11	**0.21%**
3	5	0.24%
4	13	0.30%
5	22	0.40%
6	14	0.46%
7	12	0.52%
8	17	0.60%
9	23	0.70%
10	32	0.85%
11	50	1.08%
12	39	1.26%
13	53	1.51%
14	93	1.94%
15	92	2.37%
16	86	2.76%

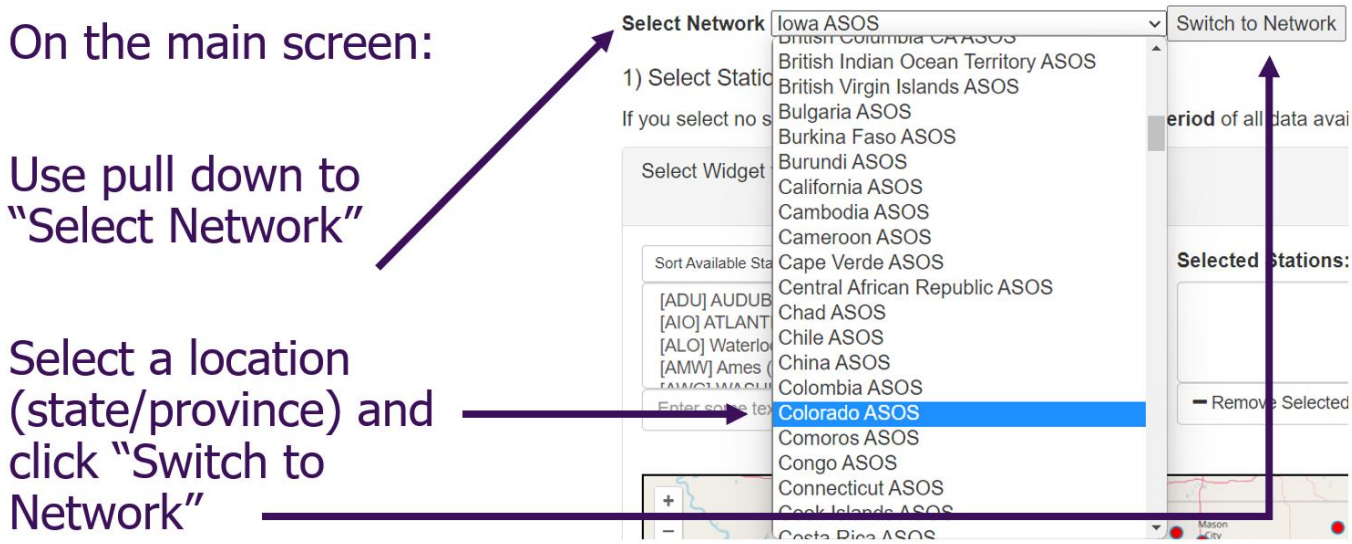


Gathering Data From ASOS

The ASOS program is a joint effort between the National Weather Service (NWS), the Federal Aviation Administration (FAA), and the Department of Defense (DOD). The primary function of ASOS stations is to take minute-by-minute observations and generate weather reports for use. The National Center for Environmental Information (NCEI) provides an archive of one-minute internal observations for many US ASOS sites back to the year 2000. Data is not available for all sites back to the year 2000.

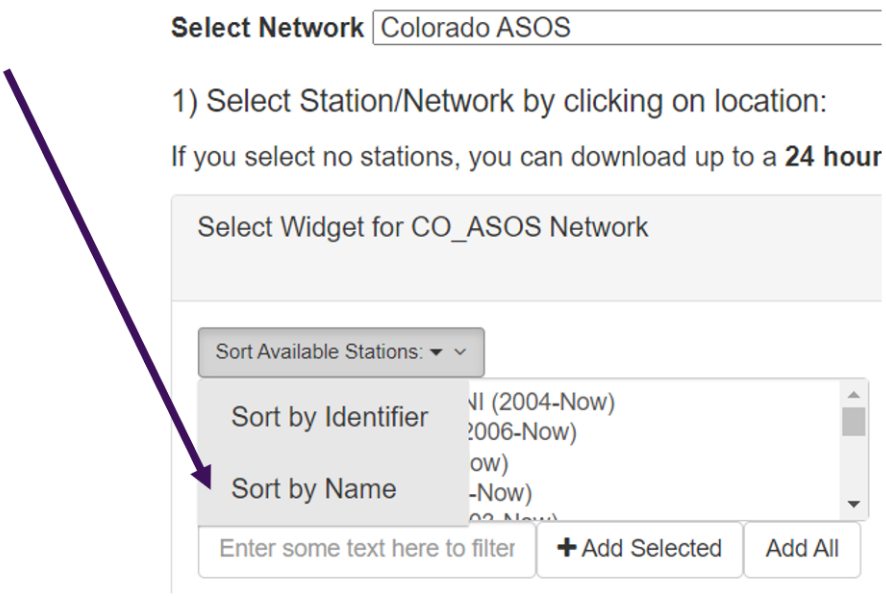
Each ASOS station is designed to provide observations every minute of every hour of every day. In general, ASOS stations are located at airports so may limit some use for ECWT calculations depending upon the Generator Owner selection process. As discussed with the NOAA example, if hourly values for temperature are not available, document in your methodology or support documents how that is managed, as complete data sets may not be available for every site (from any data source). It is important to note what may be missing/corrupt and how you approach that condition. Exercise due diligence to provide the most representative value for the ECWT. By the nature of the percentile function, significant data loss may not change the ECWT value. The key is where the data is missing in relationship to the ECWT calculated value. Missing hourly temperature values above the ECWT has limited impact to the calculation. However, missing hourly temperature values below the ECWT can impact the ECWT calculated value. The ASOS sensors measure wind speed and direction, dew point, air temperature, and station pressure. The vast majority also measure precipitation type and amount, visibility, and cloud height and thickness. Data is available for Canadian airports. More information is available at IEM :: ASOS/AWOS Network (iastate.edu) and https://mesonet.agron.iastate.edu/request/download.phtml where the example graphics were gathered. Additional information is available at ASOS (weather.gov).

1. Selecting Data
   ASOS uses "Network" to describe particular locations. From the main screen you would use the pulldown for "Select Network" and then select a particular location.



Sorting the data is available by an "identifier" (the airport code) or "name" (city or airport name normally) with "name" probably providing the easier way to identify the location needed to facilitate ECWT calculation efforts. This is needed to support the weather station selection. When downloading the information, the "identifier" will be included in the data set, so it is recommended that you ensure you are getting the correct location by both name and identifier.

Select "Sort by Identifier" or "Sort by Name" on the "Sort Available Stations" drop down.



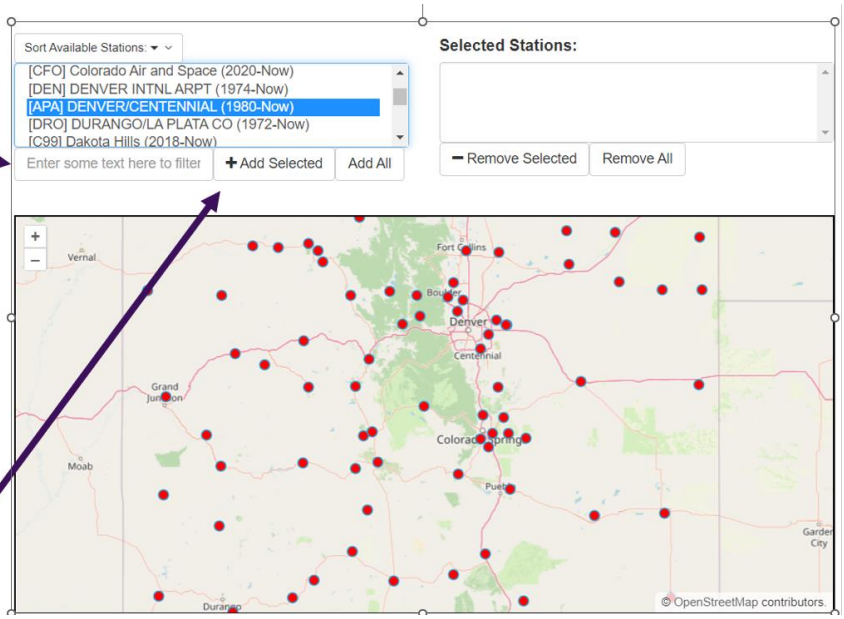
A map of available weather stations is provided along with options to select a particular weather station. Make sure you select "+ADD Selected" toggle button to capture the weather station.

Text search

Or can use the map to find a station name/ID

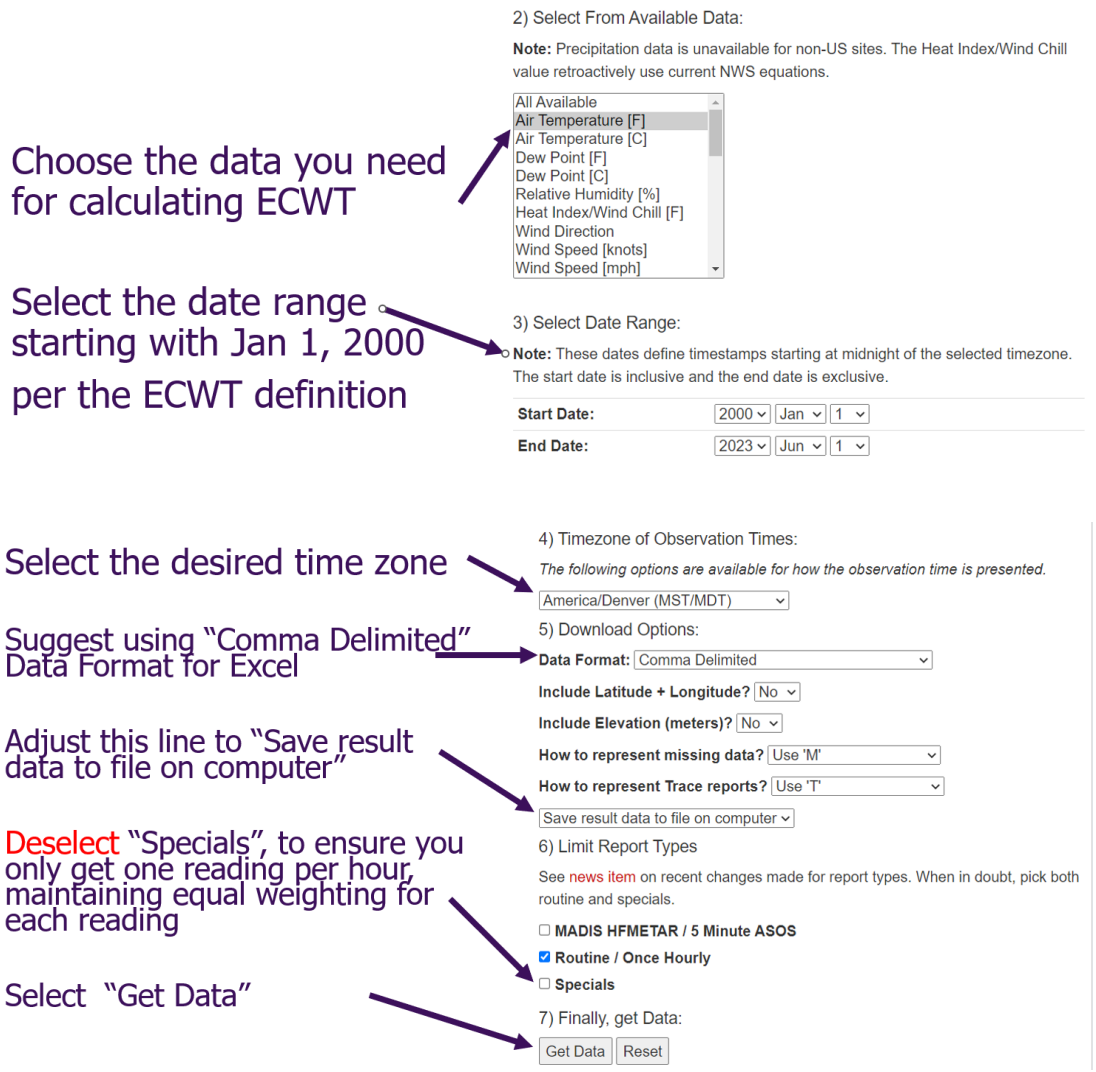
Or can just scroll and choose the station desired.

Select "+Add Selected"



At this point you can select data types, date ranges, time zones, data formats, download options, and report types. Note that some data types may not be available for the location. As discussed with the NOAA example, if hourly values for temperature are not available, document in your methodology or support documents how that is managed. It is important to note what may be missing/corrupt and how you approach that condition. Use professional judgement if there is missing data and present it in the best way possible with the rationale used. It is critically important to try to determine the best ECWT value based on available data.

Make sure you understand the "Notes" ASOS provides when selecting data.



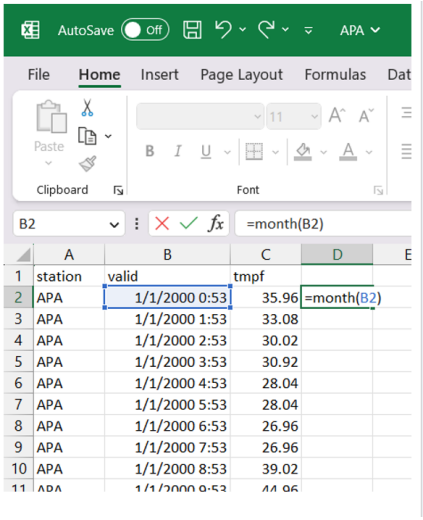
Note the "Deselection" verbiage as this could lead to possible erroneous ECWT calculations if left selected. By removing the Specials, the data set will have fewer duplicate readings in the data set.

After selecting "Get Data" you should receive a download with the filtered data. It is important to retain this raw file. The file should contain every hour for every month for the Date Range selected. This helps preserve the documentation to demonstrate the means by which you arrived at the ECWT you determine.

The ECWT definition only requires the months of December, January, and February to be selected. Once you have the comma delimited file, save it as an Excel worksheet. Then use the "MONTH" function to provie a simple numeric value (e.g., January = 1, February = 2, etc) and then filter on 1, 2, and 12 to get the three months required by the ECWT definition.

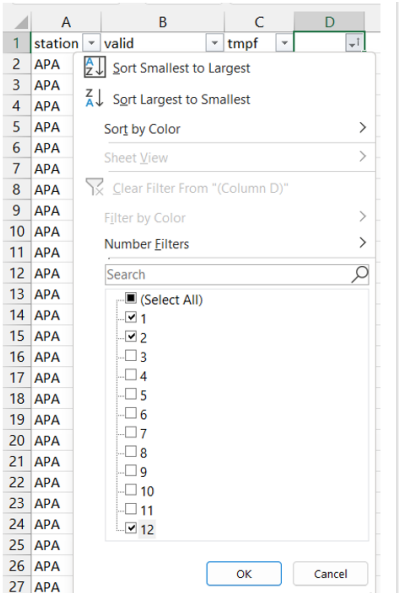
ECWT only uses the months of January, February and December.

Use the MONTH function to get a numeric value in an empty column and then copy that formula down through the end of the data set. Other filtering options can be used.



	A	B	C	D
1	station	valid	tmpf	
2	APA	1/1/2000 0:53	35.96	=month(B2)
3	APA	1/1/2000 1:53	33.08	
4	APA	1/1/2000 2:53	30.02	
5	APA	1/1/2000 3:53	30.92	
6	APA	1/1/2000 4:53	28.04	
7	APA	1/1/2000 5:53	28.04	
8	APA	1/1/2000 6:53	26.96	
9	APA	1/1/2000 7:53	26.96	
10	APA	1/1/2000 8:53	39.02	

Once a numeric value is produced you can simply use Microsoft Excel filters.



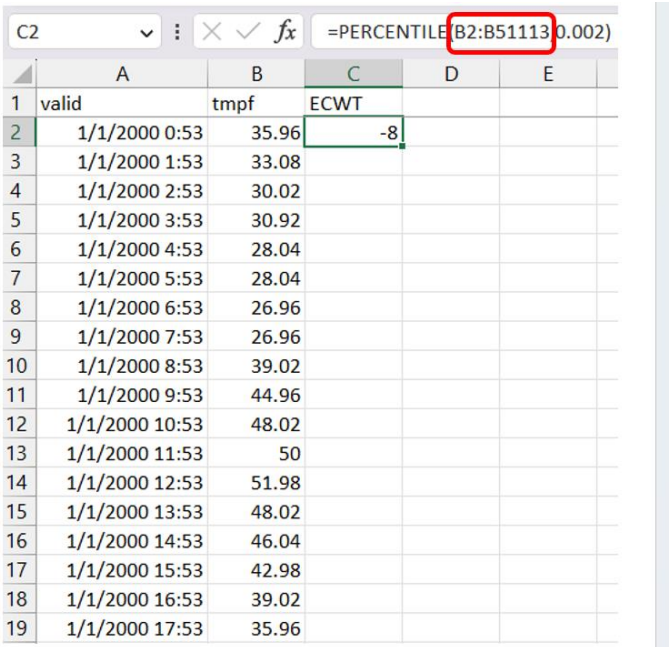
It is suggested that you highlight and copy the filtered data to another worksheet or file. Again, if moving the data to a separate spreadsheet be sure to maintain this original file for documentation.

When you paste the data into the new worksheet, you will have the data from December, Janauary and February from all years needed to calculate ECWT. Add the Microsoft Excel function "PERCENTILE" to a new cell with the proper percentile value from the ECWT definition (i.e. "0.2 percentile" which for Excel is .002). Make sure you capture your complete data set. (Example: =PERCENTILE(B:B,.002))

Compute the ECWT using the PERCENTILE function in Excel:

=PERCENTILE(range,0.002)

Ensure your range includes all the data points (e.g., B2:B51113 in the example)



	A	B	C	D	E
1	valid	tmpf	ECWT		
2	1/1/2000 0:53	35.96	-8		
3	1/1/2000 1:53	33.08			
4	1/1/2000 2:53	30.02			
5	1/1/2000 3:53	30.92			
6	1/1/2000 4:53	28.04			
7	1/1/2000 5:53	28.04			
8	1/1/2000 6:53	26.96			
9	1/1/2000 7:53	26.96			
10	1/1/2000 8:53	39.02			
11	1/1/2000 9:53	44.96			
12	1/1/2000 10:53	48.02			
13	1/1/2000 11:53	50			
14	1/1/2000 12:53	51.98			
15	1/1/2000 13:53	48.02			
16	1/1/2000 14:53	46.04			
17	1/1/2000 15:53	42.98			
18	1/1/2000 16:53	39.02			
19	1/1/2000 17:53	35.96			

In the above example, the ECWT is -8 (cell C1) based on the data in Column B. Essentially you have completed your ECWT at this point, but it is important to do a quality check or other validation effort. You want to make sure you have the most complete set of data that is as free of errors as possible to determine the ECWT.

To help ensure data quality assurance you should evaluate how many hours of data you might expect for the given year an ECWT is being calculated. Using the "COUNTA" Excel function and the data range will provide a value but a check on that value is encouraged. The basic premise is to calculate the number of "full" years by 90 (the number of days i.e., January and December have 31 and February has 28) by 24 (number of hours in a day) plus the number of past leap years (years with 29 days in February) by 24 (number of hours in a day) plus the number of days in January and February for the current year by 24 (number of hours in a day). Note: "Full" years is inclusive of 2000. It is not stated in EOP-012 but when recalculating the ECWT, you are encouraged to recalculate ***after*** February has passed and before December of the year in which you are recalculating to provide the most up to date information.

Effectively, if this example is used, the calculation for March 2024 would look like:

(24X90X24) + (6X24) + (60X24) = 53424 data points where "full" years is 24 for 2000-2023, leap years included in the calculation is 7 (2000, 20004, 2008, 2012, 2016, 2020 and 2024), and days in the current year is 59 (January is 31 and February is 28 with February 29 accounted for in the leap years). Other methods can be used of course but make sure you retain how you came up with the value.

If you noticed ASOS provides filters for missing data but may not capture missing hours. You can use Excel in a variety of ways to verify if the number of hours accounted for in the data range selected. To the point made earlier, all hours may not be available for an ECWT calculation due to a variety of issues. If a large number of hours are missing, consider using other weather stations within close proximity or the combination of NWS/NOAA and ASOS data (regardless of what your primary data source is) in an attempt to capture a fuller data set. The key is

documenting what is missing and what you did with your approach. As noted, values below the calculated ECWT can affect the ECWT value.

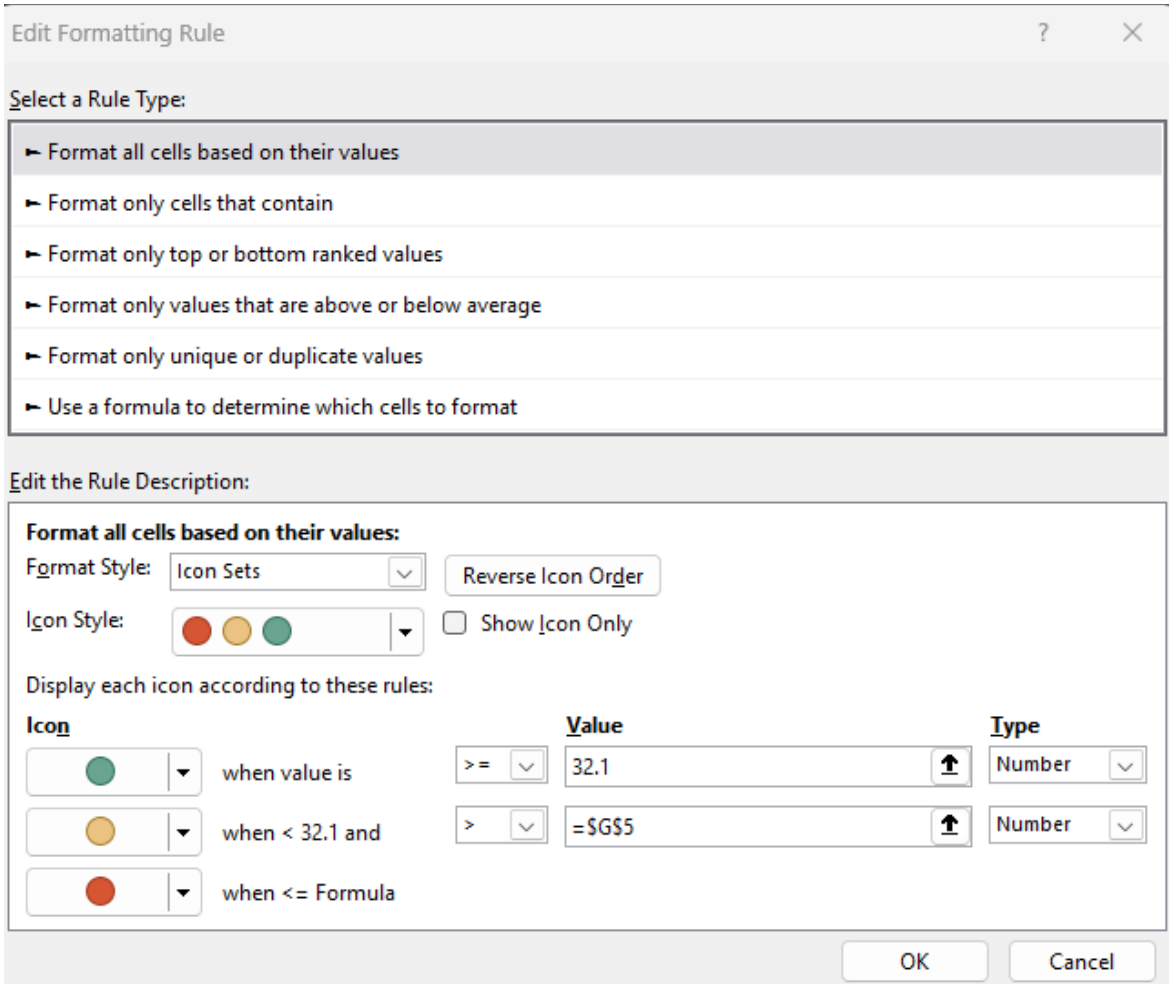
Excel also provides the ability to visualize when temperatures drop below ECWT, hover around ECWT, or exceed ECWT if more analysis is needed. This visualization, in conjunction with your efforts to find missing hours may provide insight for your approach to missing data. Simply looking at the timeframes of the missing data and relationship to the ECWT may help an entity determine the possible impacts to the ECWT calculation. In any case, document what you have done.

valid	Month	tmpf	Time Check	ECWT	Data Points	Missing Data Points
1/1/2000 8:56	1	42.8		**6.000**	53247	177
1/1/2000 9:56	1	46	1.00			
1/1/2000 10:56	1	57	1.00	Reord low temp		-17
1/1/2000 11:56	1	68	1.00	Maximum		
1/1/2000 12:56	1	72	1.00	6,603.00		
1/1/2000 13:56	1	72	1.00	Minimum		
1/1/2000 14:56	1	72	1.00	0.05		
1/1/2000 15:56	1	71	1.00			
1/1/2000 16:56	1	69	1.00			
1/1/2000 17:56	1	65	1.00			

This picture shows one way that can be used to verify the data is reasonably complete. The Data Points of 53,247 are compared to the total number of hours that are included from January 1, 2000 through February 29, 2024 of 53, 424. The Data Points number is found by using the =COUNT function and highlighting the data in the "tmpf" column.

To evaluate the missing data points, the Time Check column compares the time shown on the row above with the time on that row. The formula for this is =(B6-B5)*24. If the results of this formula are less than 1, there are possibly duplicate readings for that hour. If the result is 2 or more, it indicates that there are missing data points. Note that the first hour each December will be 6601 or greater since we do not use any hours March through November. Use Conditional Formatting in the Time Check column to highlight cells with numbers less than 0.9 and greater than 1.1 to quickly identify missing or duplicate data points.

You can also use Conditional Formatting to identify hours that are above freezing, below freezing but above the ECWT and temperatures equal to or below the ECWT. This can help determine if the missing data points are likely to cause a change in the ECWT. This shows the Conditional Formatting rule assuming the ECWT is shown in cell G5:


Edit Formatting Rule
Select a Rule Type:
Format all cells based on their values
Format only cells that contain
Format only top or bottom ranked values
Format only values that are above or below average
Format only unique or duplicate values
Use a formula to determine which cells to format
Edit the Rule Description:
Format all cells based on their values:
Format Style:
Icon Sets
Reverse Icon Order
Icon Style:
Show Icon Only
Display each icon according to these rules:
Icon
Value
Type
when value is
>=
32.1
Number
when < 32.1 and
>
=$G$5
Number
when <= Formula
OK
Cancel

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2024-03 Revisions to EOP-012-2

Formal Comment Period Open through December 20, 2024

Now Available

An 18-day formal comment period for draft two of **EOP-012-3 Extreme Cold Weather Preparedness and Operations** is open through **8 p.m. Eastern, Friday, December 20, 2024**.

The Standards Committee approved the following waiver of provisions of the Standard Processes Manual (SPM) for Project 2024-03 Revisions to EOP-012-2:

- Informal comment period for SAR reduced from 30 days to as few as 15 days (Section 4.2);
- Initial formal comment and ballot period(s) reduced from 45 days to as little as 20 days, with the ballot pool formed concurrently during the first 10 days of the initial formal comment period, and with the ballot and non-binding poll of Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) conducted concurrently during the last 5 days of the comment period (Sections 4.8 and 4.9);
- Additional formal comment and ballot period(s) reduced from 30 days to as little as 15 days, with the ballot and non-binding poll of VRFs and VSLs conducted concurrently during the last 5 days of the comment period (Sections 4.9 and 4.12);
- Final ballot period(s) reduced from 10 days to as little as 5 days (Section 4.13).

The standard drafting team's considerations of the responses received from the previous comment period are reflected in this draft of the standard.

Reminder Regarding Corporate RBB Memberships

Under the NERC Rules of Procedure, each entity and its affiliates is collectively permitted one voting membership per Registered Ballot Body Segment. Each entity that undergoes a change in corporate structure (such as a merger or acquisition) that results in the entity or affiliated entities having more than the one permitted representative in a particular Segment must withdraw the duplicate membership(s) prior to joining new ballot pools or voting on anything as part of an existing ballot pool. Contact ballotadmin@nerc.net to assist with the removal of any duplicate registrations.

Commenting

Use the Standards Balloting and Commenting System (SBS) to submit comments. An unofficial Word version of the comment form is posted on the project page.

- *Contact NERC IT support directly at https://support.nerc.net/ (Monday – Friday, 8 a.m. - 5 p.m. Eastern) for problems regarding accessing the SBS due to a forgotten password, incorrect credential error messages, or system lock-out.*

- *Passwords expire every **6 months** and must be reset.*
- *The SBS **is not** supported for use on mobile devices.*
- *Please be mindful of ballot and comment period closing dates. We ask to **allow at least 48 hours** for NERC support staff to assist with inquiries. Therefore, it is recommended that users try logging into their SBS accounts **prior to the last day** of a comment/ballot period.*

Next Steps

Additional ballots for the standard and implementation plan, as well as a non-binding poll of the associated Violation Risk Factors and Violation Severity Levels will be conducted **December 16-20, 2024**.

For information on the Standards Development Process, refer to the Standard Processes Manual.

For more information or assistance, contact Senior Standards Developer, Ben Wu (via email) or at 470-542-6882. Subscribe to this project's observer mailing list by selecting "NERC Email Distribution Lists" from the "Service" drop-down menu and specify “Project 2024-03 Revisions to EOP-012-2 observer list” in the Description Box.

North American Electric Reliability Corporation
3353 Peachtree Rd, NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

Comment Report

Project Name:	2024-03 Revisions to EOP-012-2 | Draft 2
Comment Period Start Date:	12/3/2024
Comment Period End Date:	12/20/2024
Associated Ballots:	2024-03 Revisions to EOP-012-2 | Draft 1 EOP-012-3 AB 2 ST 2024-03 Revisions to EOP-012-2 | Draft 1 Implementation Plan AB 2 OT

There were 66 sets of responses, including comments from approximately 171 different people from approximately 109 companies representing 10 of the Industry Segments as shown in the table on the following pages.

Questions

1. In paragraph 47 of the June 2024 Order, FERC directed NERC to revise EOP-012-2 to "ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them." FERC provided several examples of how NERC may meet directives in this paragraph and explained that NERC may address these concerns in an equally efficient and effective manner, provided NERC explains how it addresses FERC's concerns. The drafting team and industry recognize that every situation that creates a Generator Cold Weather Constraint cannot be listed within Attachment 1 and is the reason for Case-by-Case language provided.

Do you agree with the industry driven edits to Attachment 1? Please provide any additional comments to consider. If you do not agree, please provide your language change suggestions for the drafting team.

2. In paragraph 68 of the June 2024 Order, FERC directed NERC to modify Requirement R7 of EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. FERC provided an example for how to address this directive, such as to require shorter timeframes for those units that have experienced issues and allow longer timeframes to address similar potential issues across a fleet for those units that have not experienced issues.

The drafting team modified Requirement R6 based on industry feedback, while still maintaining the FERC directive. Do you agree that the modifications in Requirement R6 are responsive to the FERC Directives? If you do not agree, please provide your language change suggestions for the drafting team.

3. In paragraph 72 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to clarify that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

The drafting team provided updated language in Requirement R2 to address the issue of units in different stages of design and construction to support meeting this directive. June 29, 2023 was chosen as a date of demarcation, as that was the date the Extreme Cold Weather Temperature was settled upon, after the approval date of February 16, 2023. Do you agree that the industry driven edits to Requirement R2 are responsive to the FERC directives? If you do not agree, please provide your language change suggestions for the drafting team.

4. In paragraph 94 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R8, Part 8.1 of Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations (than every five years) to verify that the declaration remains valid.

Based on industry feedback, the drafting team created Requirement 9 to require review every 36 calendar months. Do you agree that the revision addresses this directive and provides an effective balance with administrative efforts to ensure Generator Cold Weather Constraints remain valid? If you do not agree, please provide your language change suggestions for the drafting team.

5. Please provide any additional comments for the standard drafting team to consider, if desired.

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
BC Hydro and Power Authority	Adrian Andreoiu	1	WECC	BC Hydro	Hootan Jarollahi	BC Hydro and Power Authority	3	WECC
					Helen Hamilton Harding	BC Hydro and Power Authority	5	WECC
					Adrian Andreoiu	BC Hydro and Power Authority	1	WECC
MRO	Anna Martinson	1,2,3,4,5,6	MRO	MRO Group	Shonda McCain	Omaha Public Power District (OPPD)	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					Jamison Cawley	Nebraska Public Power District	1,3,5	MRO
					Jay Sethi	Manitoba Hydro (MH)	1,3,5,6	MRO
					Husam Al-Hadidi	Manitoba Hydro (System Preformance)	1,3,5,6	MRO
					Kimberly Bentley	Western Area Power Adminstration	1,6	MRO
					Jaimin Patal	Saskatchewan Power Coporation (SPC)	1	MRO
					George Brown	Pattern Operators LP	5	MRO
					Larry Heckert	Alliant Energy (ALTE)	4	MRO
					Terry Harbour	MidAmerican Energy Company (MEC)	1,3	MRO
					Dane Rogers	Oklahoma Gas and Electric (OG&E)	1,3,5,6	MRO
					Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO

					Michael Ayotte	ITC Holdings	1	MRO
					Andrew Coffelt	Board of Public Utilities-Kansas (BPU)	1,3,5,6	MRO
					Peter Brown	Invenergy	5,6	MRO
					Angela Wheat	Southwestern Power Administration	1	MRO
					Joshua Phillips	Southwest Power Pool	2	MRO
					Patrick Tuttle	Oklahoma Municipal Power Authority	4,5	MRO
Santee Cooper	Carey Salisbury	5		Santee Cooper	Paul Camilletti	Santee Cooper	1,3,5,6	SERC
					Kevin Baker	Santee Cooper	1,3,5,6	SERC
					Dom Ciccollela	Santee Cooper	1,3,5,6	SERC
WEC Energy Group, Inc.	Christine Kane	3		WEC Energy Group	Christine Kane	WEC Energy Group, Inc.	3	RF
					Michelle Hribar	WEC Energy Group, Inc.	5	RF
					David Boeshaar	WEC Energy Group, Inc.	6	RF
					Candace Morakinyo	WEC Energy Group, Inc.	4	RF
Exelon	Daniel Gacek	1		Exelon	Daniel Gacek	Exelon	1	RF
					Kinte Whitehead	Exelon	3	RF
ACES Power Marketing	Jodirah Green	1,3,4,5,6	MRO,NPCC,RF,SERC,Texas RE,WECC	ACES Collaborators	Kevin Lyons	Central Iowa Power Cooperative	1	MRO
					James Shultz	Hoosier Energy Electric Cooperative	1	RF
					Kris Carper	Arizona Electric Power Cooperative, Inc.	1	WECC
					Jordan Mcclellan	Southern Illinois Power Cooperative	1	SERC

Entergy	Julie Hall	6		Entergy	Oliver Burke	Entergy - Entergy Services, Inc.	1	SERC
					Jamie Prater	Entergy	5	SERC
Electric Reliability Council of Texas, Inc.	Kennedy Meier	2		ISO/RTO Council Standards Review Committee (SRC)	Kennedy Meier	Electric Reliability Council of Texas, Inc.	2	Texas RE
					Joshua Phillips	Southwest Power Pool, Inc. (RTO)	2	MRO
					Helen Lainis	Independent Electricity System Operator	2	NPCC
					Kirsten Rowley	Midcontinent ISO, Inc.	2	RF
					Gregory Campoli	New York Independent System Operator	2	NPCC
					Thomas Foster	PJM Interconnection, L.L.C.	2	RF
					Darcy O'Connell	California ISO	2	WECC
					John Pearson	ISO New England, Inc.	2	NPCC
FirstEnergy - FirstEnergy Corporation	Mark Garza	4		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF
					Robert Loy	FirstEnergy - FirstEnergy Solutions	5	RF
					Mark Garza	FirstEnergy-FirstEnergy	1,3,4,5,6	RF
					Stacey Sheehan	FirstEnergy - FirstEnergy Corporation	6	RF
Northern California	Michael Whitney	3		NCPA	Scott Tomashefsky	Northern California Power Agency	4	WECC

Power Agency					Marty Hostler	Northern California Power Agency	5,6	WECC
					Marty Hostler	Northern California Power Agency	5,6	WECC
DTE Energy - Detroit Edison Company	Mohamad Elhusseini	5		DTE Energy	Mohamad Elhusseini	DTE Energy	5	RF
					Patricia Ireland	DTE Energy	4	RF
					Marvin Johnson	DTE Energy - Detroit Edison Company	3	RF
Southern Company - Southern Company Services, Inc.	Pamela Hunter	1,3,5,6	SERC	Southern Company	Matt Carden	Southern Company - Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
					Leslie Burke	Southern Company - Southern Company Generation	5	SERC
Black Hills Corporation	Rachel Schuldt	6		Black Hills Corporation - All Segments	Travis Grablander	Black Hills Corporation	1	WECC
					Josh Combs	Black Hills Corporation	3	WECC
					Rachel Schuldt	Black Hills Corporation	6	WECC
					Carly Miller	Black Hills Corporation	5	WECC
					Sheila Suurmeier	Black Hills Corporation	5	WECC
Northeast Power Coordinating Council	Ruida Shu	1,2,3,4,5,6,7,8,9,10	NPCC	NPCC RSC	Gerry Dunbar	Northeast Power Coordinating Council	10	NPCC

Deidre Altobell	Con Edison	1	NPCC
Michele Tondalo	United Illuminating Co.	1	NPCC
Stephanie Ullah-Mazzuca	Orange and Rockland	1	NPCC
Michael Ridolfino	Central Hudson Gas & Electric Corp.	1	NPCC
Randy Buswell	Vermont Electric Power Company	1	NPCC
James Grant	NYISO	2	NPCC
Dermot Smyth	Con Ed - Consolidated Edison Co. of New York	1	NPCC
David Burke	Orange and Rockland	3	NPCC
Salvatore Spagnolo	New York Power Authority	1	NPCC
Sean Bodkin	Dominion - Dominion Resources, Inc.	6	NPCC
Silvia Mitchell	NextEra Energy - Florida Power and Light Co.	1	NPCC
Sean Cavote	PSEG	4	NPCC
Jason Chandler	Con Edison	5	NPCC
Shivaz Chopra	New York Power Authority	6	NPCC
Vijay Puran	New York State Department of Public Service	6	NPCC
David Kiguel	Independent	7	NPCC
Joel Charlebois	AESI	7	NPCC
Joshua London	Eversource Energy	1	NPCC
Joel Charlebois	AESI	7	NPCC
John Hastings	National Grid	1	NPCC

					Erin Wilson	NB Power	1	NPCC
					James Grant	NYISO	2	NPCC
					Michael Couchesne	ISO-NE	2	NPCC
					Kurtis Chong	IESO	2	NPCC
					Michele Pagano	Con Edison	4	NPCC
					Bendong Sun	Bruce Power	4	NPCC
					Carvers Powers	Utility Services	5	NPCC
					Wes Yeomans	NYSRC	7	NPCC
					Emma Halilovic	Hydro One	1,3	NPCC
					Philip Nichols	National Grid	1	NPCC
					Emma Halilovic	Hydro One	1,3	NPCC
					Caver Powers	Utility Services	5	NPCC
Dominion - Dominion Resources, Inc.	Sean Bodkin	6		Dominion	Victoria Crider	Dominion Energy	3	NA - Not Applicable
					Sean Bodkin	Dominion Energy	6	NA - Not Applicable
					Steven Belle	Dominion Energy	1	NA - Not Applicable
					Barbara Marion	Dominion Energy	5	NA - Not Applicable
Western Electricity Coordinating Council	Steven Rueckert	10		WECC	Steve Rueckert	WECC	10	WECC
					Curtis Crews	WECC	10	WECC
Tim Kelley	Tim Kelley		WECC	SMUD and BANC	Nicole Looney	Sacramento Municipal Utility District	3	WECC
					Charles Norton	Sacramento Municipal Utility District	6	WECC
					Wei Shao	Sacramento Municipal Utility District	1	WECC
					Foung Mua	Sacramento Municipal Utility District	4	WECC

					Nicole Goi	Sacramento Municipal Utility District	5	WECC
					Kevin Smith	Balancing Authority of Northern California	1	WECC

1. In paragraph 47 of the June 2024 Order, FERC directed NERC to revise EOP-012-2 to "ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them." FERC provided several examples of how NERC may meet directives in this paragraph and explained that NERC may address these concerns in an equally efficient and effective manner, provided NERC explains how it addresses FERC's concerns. The drafting team and industry recognize that every situation that creates a Generator Cold Weather Constraint cannot be listed within Attachment 1 and is the reason for Case-by-Case language provided.

Do you agree with the industry driven edits to Attachment 1? Please provide any additional comments to consider. If you do not agree, please provide your language change suggestions for the drafting team.

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	

Comment

1-Item #2 under case-by-case determinations is not clear regarding what is meant by manufacturer's design limitations and how the declaration is applied. Many critical components have minimum operating temperatures based on the manufacturer's design of a device. Does item #2 mean a GO does not have to use freeze protections if the critical component was manufactured to operate above the ECWT? Item #2 needs to be either clarified or removed.

Additionally, Duke Energy feels the pre-approved constraint section of Attachment 1 has two additional issues. The first issue is related to the restricted focus of the constraints listed - the constraints are focused on wind and solar. While valid, other technologies also have similar constraints. For example, exposed coal piles and coal handling equipment are often impacted by winter conditions and there few freeze protection options available.

The second issue relates to the nature of some of these constraints. Some of the examples given are items that will never be resolved during the in-service life of the station. Other items listed will never have a viable option due to technical considerations. In these situations, stations are being forced by the standard to periodically review constraint declarations for items that will never be resolved. Duke Energy recommends that these types of constraints be categorized as constraints that are not only pre-approved but also do not require re-evaluation every three years.

2-Due to the broad nature and subjectiveness of Requirements 3c and 5e, these line items should be removed because it lacks specific details found elsewhere in Attachment 1.

Likes 0	
Dislikes 0	

Response

Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	

Comment

Reclamation agrees to the intent of Attachment 1, however recommends that a caveat be added at the beginning of Generator Cold Weather Constraints (both “known” and “case-by-case”) that the list is not all inclusive and can vary by industry, components and location. The attachment appears to not allow for any circumstances outside of what is being directed. Recommend a more generic approach to Attachment 1 than what is provided.

Likes 0	
Dislikes 0	

Response

Donald Lock - Talen Generation, LLC - 5

Answer	No
Document Name	

Comment

Talen supports the comments of the NAGF on this issue, and adds that the technologies and plant circumstances involved are so varied that the only comprehensible and consistent means of addressing the issue is likely to consist of issuing a detailed pre-approved list for all currently known potential GCWCs, as NERC has already started to do in Att. 1 of EOP-012-3, reducing CEA case-by-case determinations to a rarely used alternative for unforeseen circumstances.

Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	

Response

Marty Hostler - Northern California Power Agency - 4

Answer	No
Document Name	

Comment

NERC is not allowed to make a Reliability Standard that gives one entity a competitive advantage over another.

We believe these modifications create an unfair completive advantage to some generating entities over others.

Some entities are not required to do anything if their generators were originally designed to operate only above 32-degrees. But some entities were only designed to operate above 30-degrees, some only, above 20, some only above 0-degrees, etc. And, they will be required to spend time and dollars developing corrective action plans and complying with this potentially new standard.

Additionally, some entities that have facilities that were originally designed to run below 32 will not need to upgrade their system while others may, or may not, be required to redesign their facilities. And/or add additional equipment in order to operate at temperatures for which they were not designed, built, of financed to operate at.

Likes 0	
Dislikes 0	

Response

Michael Whitney - Northern California Power Agency - 3, Group Name NCPA

Answer	No
Document Name	

Comment

See Marty Hostler comments.

Likes 0	
Dislikes 0	

Response

Mason Jones - Mason Jones On Behalf of: Michael Whitney, Northern California Power Agency, 4, 6, 3, 5; - Mason Jones

Answer	No
Document Name	

Comment

NERC is not allowed to make a Reliability Standard that gives one entity a competitive advantage over another.

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Some entities are not required to do anything if their generators were originally designed to operate only above 32-degrees. But some entities were only designed to operate above 30-degrees, some only, above 20, some only above 0-degrees, etc. And, they will be required to spend time and dollars developing corrective action plans and complying with this potentially new standard.

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Likes 0	
Dislikes 0	

Response

Jeremy Lawson - Northern California Power Agency - 3,4,5,6

Answer	No

Document Name	
Comment	
See Marty Hostler comments.	
Likes 0	
Dislikes 0	
Response	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	
Comment	
Vistra supports comments made by Northern California Power Authority and NRG. With the added comment that eventhough NERC is working within FERC guidance it should be pressed upon FERC that GOs should be able to determine for themseleves the validity of making constraint upgardes. Market forces for cold weather non performance are enough for GOs to make smart, impactful and necessary upgrades.	
Likes 0	
Dislikes 0	
Response	
Becky Burden - Public Utility District No. 1 of Snohomish County - 5	
Answer	No
Document Name	
Comment	
Final paragraph of attachment 1 should be integrated into existing or made a new requirement as it reads like one.	
Likes 0	
Dislikes 0	
Response	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	No
Document Name	

Comment	
PGAE supports the NAGF position regarding suggested revisions to Attachment 1 Known Constraints timeline.	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation agrees with NAGF & EEI comments. As noted, there are no wind generator OEM developing a generator that can operate at a temperature below -22 degrees F (-30 degrees C). There are contracts that are already signed for sites that pan to be commissioned in 2027 and 2028; due to this per the first bullet under “Known Constraints in Attachment 1” is not reasonable. This was shared at the Technical Conference related to this standard and PRC-029 & as they shared OEMs need 5-7 years normally to bring a new product to market. Additionally, per EEI, the revised definition of Generator Cold Weather Constraints in Attachment 1”. Black Hills Corporation agrees with the EEI’s proposed edits.	
Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group support the comments of the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Richard Vendetti - NextEra Energy - 5	
Answer	No
Document Name	

Comment
NextEra supports the comments provided by EEI Below: Within Attachment 1 is the revised definition of Generator Cold Weather Constraint, which we do not fully support. To address our concerns, we offer the following edits in boldface (below) for DT consideration, which are intended to limit entity obligations to address those freeze protection measures that have been shown to be effective in areas with similar winter weather conditions. **Generator Cold Weather Constraint** – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. **Viable f**reeze protection measures include practices, methods, or technologies **that have been successfully** implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies. EEI also suggests changes to the 4th bullet that addresses the “accumulation of frozen precipitation on solar panels.” While EEI is supportive of this predefined limitation that recognizes the technical problems associated with ice and snow clearing on solar panels, we also believe the proposed language does not align with the other four (4) Generator Cold Weather Constraints. To address this concern, we suggest the following changes in boldface to bullet 4: Implementation of technologies for the **mitigation** of accumulated frozen precipitation on solar panels. Additionally: NextEra is concerned that Attachment 1 is not inclusive of battery technology as a potential cold weather constraint declaration.

Likes 0	
Dislikes 0	

Response

Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	

Comment
Minnesota Power agrees with NAGF that the rule needs to address OEM limitations for units in service after 2027 that can’t operate below the current design temperature or extend the compliance date.

Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	

Response

Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	
Answer	No
Document Name	
Comment	
MEC supports EEI and MRO NSRF comments as improvements to the drafted language, but the OEM issue identified by NAGF is the most significant and needs to be addressed. MEC would cast an affirmative ballot if NAGF comments for Q1, and EEI comments for Questions 2 and 3 are adopted by the SDT.	
Likes 0	
Dislikes 0	

Response

Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	

MRO NSRF Recommends the following modifications to the proposed Generator Cold Weather Constraint definition.

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Viable freeze protection measures include practices, methods, or technologies that **have been successfully** implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.

MRO NSRF would also suggest the following change to the 4th bullet of Known Generator Cold Weather Constraints to the following:

- Implementation of technologies for the purpose of mitigating the effects of accumulated frozen precipitation on solar panels.

Likes 0	
Dislikes 0	

Response

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	
Comment	

NV Energy Recommends the following modifications to the proposed Generator Cold Weather Constraint definition.

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Viable freeze protection measures include practices, methods, or technologies that have been successfully implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.

NV Energy would also suggest the following change to the 4th bullet of Known Generator Cold Weather Constraints to the following:

• Implementation of technologies for the purpose of mitigating the effects of accumulated frozen precipitation on solar panels.

Likes 0	
Dislikes 0	

Response

Ruchi Shah - AES - AES Corporation - 5

Answer	No
Document Name	

Comment

While AES US Renewables agree with the changes made to the Generator Cold Weather Constraint definition, we suggest adding the following words in the definition to make it clearer:

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. ***Viable f****reeze protection measures include practices, methods, or technologies* ***that have been successfully*** *implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.*

We also have concerns about the changes made in Attachment 1, particularly with the first bullet under “Known Generator Cold Weather Constraints” (see below for reference). Currently, as written, it implies that wind turbine OEMs will have new wind turbine designs that will not have structural limitations after 10/1/2027 (this is assuming ability to operate below -30C which is the current limitation faced by all wind turbine OEMs that we work with). It also implies that Generator Owners/developers will be able to source new wind turbines capable of meeting ECWT below -30C for wind projects that are being developed currently with commercial operation date of 10/1/2027 and beyond. This criterion is not realistic as we are not aware of any wind turbine OEMs that are currently actively working on a new design capable in operating below the current design limitation of -30C. We request that the drafting team revert to the language that was proposed in Draft 1 without further changes.

Individual wind turbine towers manufactured prior to October 1, 2027 that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1 for generating units that began commercial operation prior to October 1, 2027.

We do want to mention our support for the changes made to the second bullet under “Known Generator Cold Weather Constraints” concerning effectiveness of de-icing technologies for wind turbine blades.

Likes 0	
Dislikes 0	

Response

Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples

Answer	No
Document Name	

Comment

Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI), Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF), and the North American Generator Forum (NAGF) on question 1

Likes 0	
Dislikes 0	

Response

Robert Follini - Avista - Avista Corporation - 3

Answer	No
Document Name	

Comment

While Avista supports in part the approach that the Drafting Team has taken to address FERC Commission Directives contained in the June 27, 2024 FERC Order, Approving Extreme Cold Weather Reliability Standard EOP-012-2 And Directing Modifications, we do not support the proposed definition for Generator Cold Weather Constraint. The definition for Generator Cold Weather Constraints contained in the previous version provided the industry with useful criteria that has been lost in the revised version. And while we see value in the information provided in Attachment 1, that information could be contained in another technical document supporting this standard (i.e., Technical Rationale or Implementation Guidance), if the definition and criteria were revised to more closely align to the directives contained in the Order. To address our concerns, we offer the following edits (in boldface) to the Generator Cold Weather Constraints definition:

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions. (*Strikethroughs have been omitted for clarity*)

Criteria used to determine a **Generator Cold Weather Constraint shall consider the following:**

{C}· **A determination through an engineering analysis that the freeze protection measures lack reasonable assurances of efficacy and there is no record that such protections have been effectively utilized on** generating units **of a** comparable types in regions that experience similar winter climate conditions;

{C}· **A determination through engineering analysis that there are no available freeze protection measures, commercially available, that have been proven to be effective at mitigating the effects of the Extreme Cold Weather Temperature identified in the region where the resource is installed**; or

{C}· **A determination through an engineering economic analysis has been made that determines that the implementation of freeze protection measures necessary to mitigate the effects of the Extreme Cold Weather Temperature, while feasible, would result in the early retirement of the resource.**

Likes 0	
Dislikes 0	

Response

Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3,5 - WECC

Answer	No
Document Name	

Comment

PNM agrees with the comments of EEI. EEI made suggestions to change the defnition, please see EEI's comments.

Likes 0	
Dislikes 0	

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer	No
Document Name	

Comment

The NAGF notes that currently, there are no wind generator OEMs in the process of developing a generator that can operate at a temperature below -22 degrees F (-30 degrees C). Contracts are already being signed for sites that plan to be in service in 2027 and likely 2028. The proposed date in the first bullet under Known Constraints in Attachment 1 is not reasonable based on this information. The SDT should discuss with the OEMs if they intend to develop the capability to operate at temperatures below this to meet the requirements for wind turbines. Or if the intent is for the Generator Owner of facilities is to turn them off when temperatures reach freezing to ensure they maintain compliance with this standard. If the SDT does not engage in the recommended conversations with the OEMs, the NAGF recommends that the date be shifted to at least 2032. Based on OEM feedback provided during both the Technical Conference related to this standard and PRC-029, OEMs need 5 to 7 years normally to bring a new product to market.

Likes 0	
Dislikes 0	

Response

Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper

Answer	No
Document Name	

Comment

The proposed Case-by-Case language in Attachment 1 states, “The following situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the CEA will these circumstances constitute valid Generator Cold Weather Constraint:..” This language does not provide objective and sufficiently detailed criteria for applicable entities to understand what is required of them. The standard should be revised to remove the requirement for CEA validation of constraints or should more clearly define objective criteria for approval or rejection of a constraint declaration.

Likes 0	
Dislikes 0	

Response

Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO

Answer	No
Document Name	

Comment

The EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process indicates “ The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.” But the standard requirements R6,R7,R8 specify the CEA and footnote 11&12 were removed. In our province the CEA and the applicable government authority are different entities.

Manitoba Hydro recommends footnote 11 and 12 are added back to the standard and that for non-US Registered Entities, this additional language/guidance be added to footnote 11 and 12: Prior to the implementation of any element of a Corrective Action Plan developed in accordance

with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner.

Manitoba Hydro supports the MRO_NSRF comments.

The status of the CEA or applicable governmental authority in the CAP process and Generator Cold Weather Constraint process is an area of concern. Cold weather operation is normal operation in Manitoba. CEA/governmental authority oversight will create additional administrative burdens without improving BES reliability in Manitoba.

Likes 0	
Dislikes 0	

Response

Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers

Answer	No
Document Name	

Comment

Ameren supports EEI's and NAGF's comments.

Likes 0	
Dislikes 0	

Response

Mike Magruder - Avista - Avista Corporation - 1

Answer	No
Document Name	

Comment

See EEI's comments.

Likes 0	
Dislikes 0	

Response

Glen Farmer - Avista - Avista Corporation - 1,3,5

Answer	No
Document Name	
Comment	
We support EEi's comments.	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 6	
Answer	No
Document Name	
Comment	
CEG Supports the NAGF response to this question. Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	No
Document Name	
Comment	
PacifiCorp supports EEI comments.	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	

Answer	No
Document Name	2024-03_Unofficial_Comment_Form_EOP-012-3_120324_SRC_FINAL.docx

Comment

Introductory comments.

The ISO/RTO Council (IRC) Standards Review Committee (SRC) (consisting, for purposes of these comments, of CAISO, ERCOT, IESO, ISO-NE, PJM, MISO, NYISO, and SPP) appreciates the work that has gone into the revisions to Attachment 1, but is concerned that certain provisions of Attachment 1 are not consistent with FERC's guidance in its June 2024 Order. In those areas and in others where the language could create ambiguity, the SRC provides alternative language to ensure that the final Standard complies with FERC's directives and is clear and unambiguous. The SRC's primary concerns fall into six overarching categories:

- The definition of Generator Cold Weather Constraint and some of the constraints listed in Attachment 1 do not strike the right balance between recognizing current technological constraints and encouraging the development and deployment of new solutions to existing freeze protection challenges. The SRC proposes revised language for the Generator Cold Weather Constraint definition and Attachment 1 that is designed to better incentivize technological advancements while respecting current technological limitations.

- Part 2.1 of Requirement R2 does not comply with FERC's directive in paragraph 72 of the June 2024 Order that "any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date." The SRC proposes revised language to address this issue.

- Items 5.a and 5.c in the case-by-case constraint list in Attachment 1, which allow constraint declarations to avoid premature unit retirement or cancellation of planned units, although theoretically understandable, are overbroad, subjective, and unauditable and would require NERC and the Regional Entity to review forward market prices and the economics of particular units in order to properly assess if the requirement to winterize actually was the cause of a premature retirement or the cancellation of a planned new generating unit. Such language does not meet FERC's directive that constraint criteria be objective, unambiguous, and auditable.

- The SRC proposes additional language for the end of Attachment 1 to provide an avenue for the RC or BA to contribute to the analysis of individual constraint declarations as appropriate without imposing compliance obligations on the RC or BA.

- While the SRC believes Generator Cold Weather Constraints should be reviewed annually under Requirement R9, the 36-month review cycle in the current draft of EOP-012-3 would be more effective if it required Generator Owners to react to new information that may become available in between reviews. It would also be more effective if review results were required to be submitted to the Compliance Enforcement Authority (CEA) to enable the CEA to stay better informed of the overall pace of changes of freeze protection technology within the industry.

- The revisions to Part 1.1 of Requirement R1 regarding missing or invalid temperature data are not required to address FERC's directives from the June 2024 Order. The topic of missing or invalid data could be more effectively addressed through a dedicated working group as the industry gains real-world experience with the limitations of available datasets.

The SRC believes that generator weatherization, EOP-012-3 effectiveness, and the development of new freeze protection technologies would be significantly enhanced if NERC provided a transparent method of collecting and disseminating best practices and technological advancements to the industry. Collecting and disseminating such information would be consistent with FERC's directive in Paragraph 47 of the June 2024 Order that:

"*To the extent that NERC continues to believe that the extent of industry adoption for winterization technologies should be a criterion for declaring a constraint, NERC should clearly explain in its filing how it will assess the extent of such adoption in a way that provides for consistent compliance and enforcement outcomes."*

Affected generation owners and the regional entities enforcing the standard would both benefit from the availability and use of such transparent information portals in their decision-making. Although the SRC recognizes that EOP-012-3 appropriately focuses on Generator Owner actions rather than on NERC activities, the SRC has proposed changes to the standard language that would provide clearer direction on how generators can stay abreast of technology changes and industry best practices. The SRC believes that these additions will address FERC's directive from paragraph 47 of the June 2024 Order that NERC explain clearly '*how it will assess the extent of such [industry] adoption in a way that provides for consistent compliance and enforcement outcomes."*

Known constraint list, item #3.

Request: Revise item 3 of the known constraint list to read as follows: "Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities when wind turbine blades with effective de-icing or ice-minimizing capabilities were not made commercially available by the OEM for generating units of comparable types in regions that experience similar winter climate conditions at the time the existing blades were procured."

Justification: The SRC is concerned that the third item on the known constraint list could result in a scenario where a Generator Owner deliberately chooses to construct a unit with substandard wind turbine blades and subsequently seeks to declare a constraint. The SRC agrees that unit owners should not be required to replace existing blades solely because more effective blades subsequently become available. However, if a Generator Owner deliberately chooses to purchase and install substandard blades at a time when more effective blades are available, the Generator Owner should not be able to claim a constraint as a result of the decision to sacrifice performance to reduce construction costs. Otherwise, the standard, as proposed, would invite the use of the constraint process to avoid the consequences of decisions to install substandard equipment by creating an unjustified safe harbor for Generator Owners that chose not to perform winterization that should have occurred when the blades were purchased and installed.

To address this concern, the SRC recommends that this item be revised to read as follows: "Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities when wind turbine blades with effective de-icing or ice-minimizing capabilities were not made commercially available by the OEM for generating units of comparable types in regions that experience similar winter climate conditions at the time the existing blades were procured."

Case-by-case constraint list, item #2.

Request: Remove item 2 on the case-by-case constraint list, or revise it read as follows: “For generating units that began commercial operation before October 1, 2027, the implementation of a specific freeze protection measure would require exceeding a structural limitation of, or otherwise reasonably be expected to functionally impair the effective operation of, a specific component that is necessary to the safe and effective operation of the generating unit or facility.”

Justification: The SRC is concerned that item 2 on the list of case-by-case constraints in Attachment 1 is overly broad. As currently drafted, item 2 could be understood to mean that any manufacturer design limitation is valid grounds for a constraint, even if the design limitation affects only a portion of the plant and can easily be worked around (for example, if the design limitation consists of a minimum operating temperature for a piece of equipment that can easily be kept warm with an external heater) or if the manufacturer of the equipment in question is no longer in business or is otherwise unavailable to opine on the feasibility of implementing a freeze protection measure that was not considered when the equipment in question was originally designed and constructed.

In other words, the SRC is concerned that item 2 could be understood to imply that generators do not need to winterize to temperatures below the designed minimum operating temperature of some component of the plant (even if it would be technically feasible to do so through measures such as the addition of external heat sources).

Additionally, it is not clear to the SRC what scenario item 2 addresses that could not be addressed equally well by item 1 or item 3.b., and the SRC therefore recommends that item 2 be removed. If the drafting team elects to retain item 2, the SRC recommends that item 2 be limited as follows to scenarios in which an existing plant is physically unable to accommodate the freeze protection measures:

“For generating units that began commercial operation before October 1, 2027, the implementation of a specific freeze protection measure would require exceeding a structural limitation of, or otherwise reasonably be expected to functionally impair the effective operation of, a specific component that is necessary to the safe and effective operation of the generating unit or facility.”

Case-by-case constraint list, item #4 & Generator Cold Weather Constraint definition.

Request—GCWC definition: return to the definition of Generator Cold Weather Constraint that was proposed in the October draft of EOP-012-3, or revise the second sentence of the Generator Cold Weather Constraint definition to read as follows:

“Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would reasonably be expected to result in effective facility performance while operating at the Extreme Cold Weather Temperature.”

Request—item 4: revise item 4 of the case-by-case constraint list to read as follows:

“A determination, through an analysis (which may be supported by an analysis of industry best practices and the state of proven technologies), that the freeze protection measure has been shown to be ineffective or could reasonably be expected to be ineffective in enabling facility performance while operating at the Extreme Cold Weather Temperature.”

Justification—Industry practice: While the SRC agrees with the language in the first portion of item 4 of the case-by-case constraint list in Attachment 1, the SRC is concerned that neither the second portion of item 4 nor the new language added to the Generator Cold Weather Constraint definition are responsive to FERC's directive in Paragraph 47 of the June 2024 Order. Specifically, Paragraph 47 states:

To the extent that NERC continues to believe that the extent of industry adoption for winterization technologies should be a criterion for declaring a constraint, NERC should clearly explain in its filing how it will assess the extent of such adoption in a way that provides for consistent compliance and enforcement outcomes.

The language in the second portion of item 4 and the new language (reinstated from Project 2021-07) added to the Generator Cold Weather Constraint definition both indicate that the extent of industry adoption of winterization technologies should be a criterion for declaring a constraint, but do not explain how the extent of such adoption will be assessed in a way that provides for consistent compliance and enforcement outcomes. Consequently, the SRC believes this language is inconsistent with FERC's directive.

The SRC is also concerned that this language could be construed to allow generating units to ignore technological advancements in freeze protection technology, as any new technology needs to have at least one early adopter before it can develop the track record necessary to conclude it has been effectively utilized on similar types of units in areas with similar winter weather conditions. If no unit owner is willing to try a new freeze protection technology, there will never be a record that the technology has been effectively utilized, and constraints that are based on the absence of that technology will continue to remain in effect.

While the SRC recognizes that FERC did not categorically reject the use of industry practice as a barometer for measuring the technological effectiveness of freeze protection measures, any reliance on industry practice should follow FERC's directive in Paragraph 47 of the June 2024 Order. Additionally, current industry practice should not be the sole barometer of technology effectiveness for the application of freeze protection measures. Industry practice proved ineffective to ensure reliable performance during Winter Storms Uri and Elliott, resulting in the development of EOP-012. Additionally, current industry practice may not capture technological advances in freeze protection measures, and basing constraints on current industry practice alone may create an incentive for generating units to avoid implementing technological advancements in freeze protection measures in order to keep industry practice static and maintain the validity of existing constraints.

While industry practice and experience may provide valuable supporting information in demonstrating that an entity meets the criteria for declaring a constraint, it should not form the sole basis for or definition of what constitutes a constraint. For these reasons, the SRC recommends that the constraint not be based on 'current industry practice.' Rather, the basis of the constraint should be the effectiveness of the freeze protection measures in question. Information about industry best practices and technological advancement or why a unit is not compatible with an application of best practices and new technologies may be useful information for the CEA in evaluating the validity of the constraint declaration. To aid in the implementation of this requirement and save Generator Owners from having to consult multiple sources of information on technological advancements, the SRC proposes in its introductory comments above that NERC develop and maintain a database of best practices and winterization technology advancements.

Justification—Drafting best practice: As a matter of drafting practice, the SRC also disagrees with including language that clarifies the definition of freeze protection measures within the Generator Cold Weather Constraint definition, as nested definitions can make it difficult to analyze the meaning of a standard. If the term *freeze protection measures* does not appear in the NERC Glossary of Terms, an entity should be able to conclude that the dictionary definition or common meaning of the term applies. The entity should not need to begin reviewing other defined terms in the NERC Glossary just to ensure that no other term contains language limiting or clarifying the meaning of *freeze protection measures*.

Justification—Burden on Generator Owners: Finally, the SRC is concerned that a constraint based on undefined "industry practice" could be difficult for Generator Owners to document and burdensome for the CEA to review. Without the SRC's suggested NERC database of best practices and technological developments as described above, it is not clear how thoroughly a Generator Owner would need to survey the current state of industry in order to convince the CEA that "no record" exists of a given freeze protection measure being effectively used elsewhere, nor is it clear how the CEA would evaluate such a survey. Even if a Generator Owner could convincingly demonstrate that no record exists of a freeze protection measure being effectively used elsewhere, such a demonstration would not necessarily be dispositive of the question of whether the freeze protection measure would function effectively or whether there are legitimate technical or operational reasons the freeze protection measure should not or could not be applied to a particular generating unit or facility.

Proposed solutions: To address these concerns, the SRC recommends that the drafting team either return to the definition of Generator Cold Weather Constraint that was proposed in the October draft of EOP-012-3 or revise the second sentence of the Generator Cold Weather Constraint definition to focus on the inherent effectiveness of the freeze protection measure rather than on industry practice, as follows:

"Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would reasonably be expected to result in effective facility performance while operating at the Extreme Cold Weather Temperature."

The SRC likewise recommends that item 4 of the case-by-case constraint list be revised to read as follows:

"A determination, through an analysis (which may be supported by an analysis of industry best practices and the state of proven technologies), that the freeze protection measure has been shown to be ineffective or could reasonably be expected to be ineffective in enabling facility performance while operating at the Extreme Cold Weather Temperature."

Case-by-case constraint list, item #5.

The SRC notes that evaluating constraints based on the impact of potential generating unit retirements may be difficult without input from the RC or BA, as these functional entities have visibility into the overall state of the bulk-power system and the generator interconnection queue that individual Generator Owners likely do not possess. Later on in these comments, the SRC proposes some additional language for the end of Attachment 1 to provide an avenue for the RC or BA to contribute to the analysis as appropriate without imposing compliance obligations on the RC or BA.

Case-by-case constraint list, item #5.a.

Request: Remove item 5.a from the case-by-case constraint list.

Justification: The SRC recommends that item 5.a on the case-by-case constraint list in Attachment 1 be removed, as it does not meet FERC's directive that constraint criteria be objective, unambiguous, and auditable. The proposed language in item 5.a does not address how "accelerated" or "premature" a retirement must be in order to qualify as a constraint, nor does it provide a basis for making an auditable determination that the requirement to implement freeze protection measures was the clear cause of the premature retirement.

To effectively evaluate whether the requirement to winterize "resulted" in a "premature retirement," auditors would have to examine the cost of the freeze protection measures, forecasts of future energy prices, and commercially sensitive data about unit operating costs and profitability to determine

whether winterizing the unit would truly be uneconomic over the unit's future remaining life. Moreover, the analysis would also need to consider the across-the-board electricity price impacts that would result from competitors of that unit attempting to pass through the costs of similar weatherization work. Such price increases could offset the costs of implementing freeze protection measures, making it extremely difficult to effectively review or audit a determination that the requirement to implement the winterization measure 'resulted' in premature retirement. Such a review or audit would likely require a complete examination of the projected future profitability of the unit under a range of scenarios.

This degree of economic analysis and forecasting is not an appropriate role for NERC or the Regional Entities, nor is it their traditional area of expertise. It would also involve what could be a highly subjective examination of that unit's competitive position relative to its peers on a forward-looking basis. As a result, although the SRC respects the SDT's efforts to avoid driving unit retirements, creating a blanket exemption for units that otherwise would 'prematurely retire' creates an unworkable and unauditable exception that could stymie enforcement of EOP-012-3 and frustrate the underlying intent of improving weatherization for all generation.

Along these same lines, item 5.a would also require the unit owner to prognosticate on whether 'acceptable replacements' are available for its unit. In competitive markets, this information is highly confidential and market sensitive, leaving the Generator Owner declaring the constraint unable to make the required showing.

For these reasons, and in light of FERC's directive that constraint criteria be objective, unambiguous, and auditable, the SRC urges the elimination of item 5.a as written. Item 6 on the case-by-case constraint list is sufficient to address generating unit retirements.

Case-by-case constraint list, item #5.b.

Request: Remove item 5.b from the case-by-case constraint list.

Justification: While the SRC recognizes that item 5.b, which addresses the potential cancellation of planned new generating units, aligns closely with language that the June 2024 Order indicated may be acceptable, the SRC believes item 5.b similarly lacks an objective standard that the CEA could use to determine whether implementation of the freeze protection measures 'caused' the Generation Owner to cancel plans to finish development of a new generating unit.

Decisions to cancel a unit are based on many factors, including changes to the underlying economics of developing the unit. In this case, evaluating the asserted basis for cancelling the development of the planned new generating unit would require NERC or the Regional Entity to attempt to forecast future generator revenues while accounting for higher wholesale electricity prices resulting from increased costs faced by other units as a result of installing freeze protection measures. NERC and the Regional Entity might have to examine minutes of Board meetings and question company officials in order to effectively determine whether the decision to cancel the development of the new unit was truly 'caused' by the requirement to install freeze protection measures instead of some other factor, such as higher interest rates or increased permitting costs (as compared to expected future revenues).

This constraint is unauditable without a level of investigation and examination of company decision making that is beyond what is reasonable in the context of evaluating a constraint declaration. For these reasons, as well as those addressed in the discussion of item 5.a above, the SRC believes that item 5.b is not objective, unambiguous, and auditable and should be removed. A unit that is unavailable on a cold, peak-demand day because of inadequate freeze protection measures is of little value. As a result, a blanket constraint that would allow such units to remain on the system based on

unauditable assertions that the Generator Owner would otherwise 'prematurely retire' the unit or 'cancel' the construction of a new generating unit undermines the goal of ensuring reliability by bringing all generating units up to a minimum winterization level (subject to only a limited set of constraints based on the physical limitations of certain units) based on expected conditions.

Case-by-case constraint list, item #5.c.

The SRC recommends that the language at the end of item 5.c on the case-by-case constraint list in Attachment 1 be revised to read as follows to clarify the meaning of the language: " . . . during conditions in which freeze protection measures are not required to ensure reliable operation of the generating unit."

Case-by-case constraint list, items #5.c and #5.d.

Request: The SRC recommends that the references to "TP, RC, BA, etc." in items 5.c and 5.d of the case-by-case constraint list be replaced with references to just the RC.

Justification: Larger entities will often be registered as BAs or TPs in addition to being registered as Generator Owners. According to the NERC Compliance Registry as of the date of these comments, 69 Generator Owners are also registered as BAs, while 117 Generator Owners are also registered as TPs. In contrast, only four Generator Owners are also registered as RCs. Even though this analysis does not account for scenarios in which a Generator Owner has a corporate affiliate that is registered as an RC, BA, or TP, it still indicates that, for a given constraint declaration, the RC is more likely to be an independent entity that can offer an unbiased, third-party perspective on the appropriate reliability threshold for items 5.c and 5.d.

Case-by-case constraint list, item #9.

Request: Revise item 9 of the case-by-case constraint list to read as follows: "Implementation of freeze protection measures would not increase reliability of a generating unit due to clearly delineated fuel supply restrictions imposed for technical or physical reasons by the generating unit's fuel supplier that the generating unit has communicated to its Reliability Coordinator or Balancing Authority."

Justification: The SRC is concerned that item 9 on the case-by-case constraint list in Attachment 1 could be construed to provide a basis for constraints based on speculation regarding potential fuel supplier nonperformance during cold weather or past intermittent fuel supplier performance issues. While the SRC agrees that a constraint may exist in a scenario in which the fuel supplier notifies the Generator Owner in advance that it is categorically unable to supply fuel below a certain temperature, the SRC is concerned that item 9 goes beyond this scenario.

As currently drafted, item 9 could be understood to allow a constraint in a scenario in which a Generator Owner's fuel supplier has a poor track record of delivering fuel in certain weather conditions, but sometimes delivers fuel in those conditions. A track record of intermittent performance by a Generator Owner's fuel supplier should not be grounds for a constraint, as the definitions of Fixed Fuel Supply Component, Generator Cold Weather Critical Component, and Generator Cold Weather Reliability Event all explicitly exclude factors that are outside of the Generator Owner's control.

To address this concern, the SRC recommends that item 9 be revised as follows so that it is limited to a scenario in which it is known in advance that a fuel supplier is categorically unable to supply fuel in certain conditions: "Implementation of freeze protection measures would not increase reliability of a

generating unit due to clearly delineated fuel supply restrictions imposed for technical or physical reasons by the generating unit's fuel supplier that the generating unit has communicated to its Reliability Coordinator or Balancing Authority."

End of Attachment 1.

The SRC recommends that the last paragraph in Attachment 1 be revised to read as follows to clarify that the relevant Reliability Coordinator or Balancing Authority may choose to provide information that would assist the CEA in evaluating certain types of constraints and to clarify that a valid constraint declaration does not necessarily carry any weight for purposes of any non-EOP-012 regulatory regimes that may apply to the unit in question:

When submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply. ***If a Generator Cold Weather Constraint declaration indicates that the application of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk-Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s), the documentation that defends and supports the constraint should include any assessment that the applicable Balancing Authority or Reliability Coordinator might agree to provide concerning the impact to the reliability of the Bulk-Power System if the constraint were to be granted.*** An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3***, and does not in any way purport to relieve the Generator Owner of any other legal obligations or requirements outside of the requirements of EOP-012-3, including tariff, regulatory, or statutory obligations or requirements***.

Likes 0	
Dislikes 0	

Response

Colin Chilcoat - Invenergy LLC - 6

Answer	No
Document Name	

Comment

Invenergy appreciates the work of the drafting team and agrees with many of the edits to Attachment 1 in Draft 2. That said, we would like the drafting team to consider the comment below.

Please consider revising bullet 1 of the Known Generator Cold Weather Constraints to read, "Individual wind turbine towers that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1." The structural limitations of wind turbine towers relative to extreme cold temperatures are not limited to only existing wind turbine towers as implied by the revisions in Draft 2. The same or similar structural limitations will also be present in wind turbine towers manufactured after October 1, 2027, and for the foreseeable future.

Likes 0	
Dislikes 0	

Response

Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	
Comment	
Invenergy appreciates the work of the drafting team and agrees with many of the edits to Attachment 1 in Draft 2. That said, we would like the drafting team to consider the comment below. Please consider revising bullet 1 of the Known Generator Cold Weather Constraints to read, “Individual wind turbine towers that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1.” The structural limitations of wind turbine towers relative to extreme cold temperatures are not limited to only existing wind turbine towers as implied by the revisions in Draft 2. The same or similar structural limitations will also be present in wind turbine towers manufactured after October 1, 2027, and for the foreseeable future.	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC	
Answer	Yes
Document Name	
Comment	
WECC appreciates the efforts made by the DT to clarify Generator Cold Weather Constraints in Attachment 1. Consider adding additional guidance, if given the chance, to the Technical Rationale regarding like events at “similar” units.	
Likes 0	
Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	

While NRG agrees with the changes to Attachment 1, the cost of implementing many of the actions that are up for subjective review may be a large driver of an owner filing for a Generator Cold Weather Constraint. We understand NERC's lack of authority in addressing cost considerations as a basis for a constraint. NRG's concern is that the owner and the CEA may end up talking past one another in Case-by-Case determinations since cost issues are not addressed in the attachment. While the SDT assures the industry that cost considerations can be addressed, the plain language in Attachment 1 can be read not to allow this. This may force owners into decisions, including unit retirement, that will have an unwanted impact on reliability.

While the language as proposed does provide known constraints for solar power facilities in Attachment 1, the terminology of "solar panels" used in the 5th bullet of the known constraint section may be perceived as too constrictive. There are solar facilities that utilize heliostats to focus solar energy, and the heliostats have similar characteristics making freezing precipitation not feasible to remedy. NRG believes that the terminology of "solar panels" was chosen due to its more colloquial understood meanings, which would include heliostats, but NRG believes distinct identification of technologies in known constraints would lead to clarity during constraint declarations and audits.

Likes 0	
Dislikes 0	

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5

Answer	Yes
Document Name	

Comment

While NRG agrees with the changes to Attachment 1, the cost of implementing many of the actions that are up for subjective review may be a large driver of an owner filing for a Generator Cold Weather Constraint. We understand NERC's lack of authority in addressing cost considerations as a basis for a constraint. NRG's concern is that the owner and the CEA may end up talking past one another in Case-by-Case determinations since cost issues are not addressed in the attachment. While the SDT assures the industry that cost considerations can be addressed, the plain language in Attachment 1 can be read not to allow this. This may force owners into decisions, including unit retirement, that will have an unwanted impact on reliability.

While the language as proposed does provide known constraints for solar power facilities in Attachment 1, the terminology of "solar panels" used in the 5th bullet of the known constraint section may be perceived as too constrictive. There are solar facilities that utilize heliostats to focus solar energy, and the heliostats have similar characteristics making freezing precipitation not feasible to remedy. NRG believes that the terminology of "solar panels" was chosen due to its more colloquial understood meanings, which would include heliostats, but NRG believes distinct identification of technologies in known constraints would lead to clarity during constraint declarations and audits.

Likes 0	
Dislikes 0	

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter

Answer	Yes
Document Name	

Comment

FirstEnergy agrees with the Case-by-Case language.

Likes 0	
Dislikes 0	

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer	Yes
Document Name	

Comment

Within Attachment 1 is the revised definition of Generator Cold Weather Constraint, which we do not fully support. To address our concerns, we offer the following edits in boldface (below) for DT consideration, which are intended to limit entity obligations to address those freeze protection measures that have been shown to be effective in areas with similar winter weather conditions.

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. **Viable f**reeze protection measures include practices, methods, or technologies **that have been successfully** implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.

EEI also suggests changes to the 4th bullet that addresses the “accumulation of frozen precipitation on solar panels.” While EEI is supportive of this predefined limitation that recognizes the technical problems associated with ice and snow clearing on solar panels, we also believe the proposed language does not align with the other four (4) Generator Cold Weather Constraints. To address this concern, we suggest the following changes in boldface to bullet 4:

Implementation of technologies for the mitigation of accumulated frozen precipitation on solar panels.

Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	

Response

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro

Answer	Yes
Document Name	

Comment

BC Hydro appreciates the drafting team efforts and the opportunity to comment, and offers the following.

The Attachment 1 repeats the Generator Cold Weather Critical Component (GCWCC) definition. As this will be part of the NERC Glossary of Terms, BC Hydro suggests that its direct reference is sufficient, and that the second paragraph of the Attachment 1 can be removed.

Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
AZPS agrees with this approach	
Likes 0	
Dislikes 0	
Response	
Nikki Carson-Marquis - Nikki Carson-Marquis On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Nikki Carson-Marquis	
Answer	Yes
Document Name	
Comment	
Minnkota Power Cooperative supports comments made by the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Mary Smith - Southern Indiana Gas and Electric Co. - 1,3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
SIGE supports EEI comments.	
Likes 0	
Dislikes 0	

Response	
Daniel Gacek - Exelon - 1, Group Name Exelon	
Answer	Yes
Document Name	
Comment	
Exelon supports the comments submitted by the EEI	
Likes 0	
Dislikes 0	
Response	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	Yes
Document Name	
Comment	
See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Additionally, Southern Company agrees with the changes recommended by EEI.	
Likes 0	
Dislikes 0	
Response	

Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Lovita Griffin - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Dillard - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Tony Hua - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Erin Wilson - NB Power Corporation - New Brunswick Power Transmission Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Darcy O'Connell - California ISO - 2	
Answer	
Document Name	
Comment	
CAISO agrees with comments submitted by the ISO/RTO Counsel (IRC) Standards Review Committee	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	

Texas RE is has the following clarification recommendations:

- Consider revising case 3e and move the verbiage to 3 (recommended change in bold):
  - "The implementation of a specific freeze protection measure is precluded by technical or physical limitations, **as determined through operating experience or engineering analysis and supported with justification**. For example:" This edit clarifies the criterion by which situation 3 circumstances are determined, without introducing what could be perceived as an additional set of circumstances.
- Consider revising case 5e in a similar manner.
- In case 4, consider removing the verbiage "or that there is no record that such a measure has been effectively utilized" as it is unclear how an entity would provide evidence that there is no record of a measure being effectively utilized in comparable circumstances.
- Consider removing case 10. While it allows for possibilities not thought of by the SDT, this Texas RE is concerned it is overly broad and permissive. If it is retained, consider replacing "limit" with "preclude" since it is the latter term that defines a Generator Cold Weather Constraint.

Likes 0	
Dislikes 0	

Response

2. In paragraph 68 of the June 2024 Order, FERC directed NERC to modify Requirement R7 of EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. FERC provided an example for how to address this directive, such as to require shorter timeframes for those units that have experienced issues and allow longer timeframes to address similar potential issues across a fleet for those units that have not experienced issues.

The drafting team modified Requirement R6 based on industry feedback, while still maintaining the FERC directive. Do you agree that the modifications in Requirement R6 are responsive to the FERC Directives? If you do not agree, please provide your language change suggestions for the drafting team.

Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	

Comment

Invenergy believes Requirement R6, specifically R6.3.5.1. and the accompanying footnote, remains too subjective and does not provide a uniform amount of time to Generator Owners to implement any needed corrective actions following an event. For example, does an event experienced in September qualify as “early in the season,” and therefore require implementation of corrective actions prior to December 1 of that same year?

Invenergy understands FERC’s desire for shorter deadlines to implement corrective actions, and we believe an 18-month timetable from the date of the event both meets FERC’s desire and provides the necessary clarity and flexibility for Generator Owners to schedule needed maintenance outages in a manner that supports BES reliability and keeps generators online.

Likes 0	
Dislikes 0	

Response

Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	

Comment

OPG support NB Power's comment:

Requirement R6 assumes that Generator Cold Weather Reliability Events are identified based on their definition, but there is a weakness in the definition of Generator Cold Weather Reliability Event that may make it unsuitable for auditing in its present form. The issue stems from the fact that a Generator Cold Weather Reliability Event is defined in terms of “apparent cause”:

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner’s control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage

Thus the definition of Generator Cold Weather Reliability Events is based on apparent causes(s) and Apparent Cause Analysis (ACA).

Referring to *Cause Analysis Methods for NERC, Regional Entities, and Registered Entities – September 2011*, Section 3.4, *Apparent Cause Analysis (quoting Revision 2, dated September 20, 2011 in the version history table)*:

An apparent cause is defined as a determination based on the evaluator's judgment and experience, and where reasonable effort is made to determine WHY the problem occurred. ACA seeks to determine why the problem occurred based on reasonable effort and the investigator's judgment and experience (the investigator is often a subject matter expert.) The emphasis of an ACA is primarily to correct a particular event or problem without a special effort to identify the underlying system or process problems that may have contributed to the problem. Performing an ACA should not prevent the identification and correction of these underlying contributors if they can be discovered and addressed easily. Several tools can be used to accomplish an ACA. One of the simplest and most effective tools is the "why staircase."

NOTE: ACA is not industry standard for system disturbances or major events and is not referenced in the Department of Energy (DOE) Guidelines for Root Cause Analysis. A proper corrective action plan cannot be determined based on apparent causes. To establish proper corrective action plans to prevent reoccurrence, the root causes of the event must be determined. By only looking at apparent causes, the underlying root cause may be overlooked allowing a reoccurrence of the deficiency leading to the event.

Thus, according to NERC's guidelines, an apparent cause is based on the evaluator's judgment and experience, and is not suitable for the determination of a proper corrective action plans. Quoting NERC's guidance, "to establish proper corrective action plans to prevent reoccurrence, the root causes of the event must be determined. By only looking at apparent causes, the underlying root cause may be overlooked, allowing a reoccurrence of the deficiency leading to the event."

In order to determine proper corrective action plans, a proper root cause analysis must be completed; however, undertaking proper root cause analysis requires time, planning, and resources. Moreover, northern and Canadian entities operate in sub-freezing temperatures for substantial parts of each year. Many generator outages, derates, and startup failures occur in sub-freezing temperatures for reasons completely unrelated to "freezing of equipment" or "freezing precipitation." To require that all outages, derates, and startup failures must be investigated to a level to convince an auditor that there is no possible link to freezing weather outside, and thus is not a Generator Cold Weather Reliability Event would impose a disproportionate burden on northern and Canadian entities, many of which have extensive experience operating reliability in sub-freezing temperatures. Exposing northern and Canadian entities to an audit in which their identification of "apparent causes" based on "judgement and experience" is called into question after the fact by an auditor who may not have the background or contextual information about the equipment and may not have had extensive experience with regional weather patterns is likely to lead to inconsistent audit outcomes and disproportionate compliance burden that will do little or nothing to improve system reliability.

The process of selecting generator outages, derates, and startup failures for investigations that would be worthwhile to investigate for possible identification as Generator Cold Weather Reliability Events will necessarily be different from region to region due to regional variations in weather and climate, generating station design, operating experience, and even language (e.g., what Americans call 'sleet' is referred to as 'ice pellets' in Canada). Thus, it is suggested to split the implicit requirement to investigate generator forced outages and derates and startup failures out of Requirement R6 and write a new requirement (here styled R10), something like:

R10. Each Generator Owner of generating units with Extreme Cold Weather Temperatures at or below 32°F/0°C and that self-commit or are required to operate at or below 32°F/0°C shall implement a documented process to identify, investigate, and analyze root causes for the subset of generator forced outages, forced derates, and startup failures that is likely to lead to the identification of Generator Cold Weather Reliability Events. Such a process shall include:

Criteria for selecting candidate generator forced outages, forced derates, and startup failures to be investigated,

A requirement that at least one [or some minimum number] forced outage, forced derate, or startup failure occurring at temperatures at or below 32°F/0°C minimum number be selected for investigation each year unless no such events occur,

A systematic methodology for investigating, analyzing the root causes of, and developing Corrective Action Plans for selected forced outages, forced derates, and startup failures, and

{C}· *Criteria for determining if a generator forced outage, forced derate, or startup failure is in fact a Generator Cold Weather Reliability Event.*

With the addition of a documented process to identify Generator Cold Weather Reliability Events, Requirement R6 could be rewritten to begin:

R6. Each Generator Owner shall, when experiencing a Generator Cold Weather Reliability Event identified pursuant to Requirement R10, develop and implement a Corrective Action Plan(s) to address the identified root causes as follows…

The application of a documented, systematic methodology to select, analyze root causes for, and develop Corrective Action Plans for Generator Cold Weather Reliability Events would lead to more consistent audit outcomes by removing auditor judgment from the evaluation of causal analysis and better reliability outcomes through the completion of properly established Corrective Action Plan(s) based on systematic root cause analysis.

Likes 0	
Dislikes 0	

Response

Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion

Answer	No
Document Name	

Comment

Section 6.4 and the Generator Cold Weather CAP Extension and Constraint Process need to align with one another. The Standard and the Process should make allowances for changes to a CAP schedule *due to circumstances beyond the GOs control* that may occur within 60 days of the original CAP deadline. An example is a generator that is scheduled for a Planned Outage to conduct the work and due to unexpected weather or other constraints within the generators system, the outage is reschedule by the TP or BA. This often occurs at the last minute and will put the GO past the “60 calendar days before the original CAP due date” required by the Extension Process.

We suggest specifying in the standard a specific due date for applying for CAP extensions with the allowable exceptions. Sixty days prior is unreasonable when there are many issues beyond the GO’s control that could affect the implementation schedule of a CAP with the aforementioned 60 calendar days.

Likes 0	
Dislikes 0	

Response

Colin Chilcoat - Invenergy LLC - 6

Answer	No

Document Name	
Comment	
Invenergy believes Requirement R6, specifically R6.3.5.1. and the accompanying footnote, remains too subjective and does not provide a uniform amount of time to Generator Owners to implement any needed corrective actions following an event. For example, does an event experienced in September qualify as “early in the season,” and therefore require implementation of corrective actions prior to December 1 of that same year? Invenergy understands FERC’s desire for shorter deadlines to implement corrective actions, and we believe an 18-month timetable from the date of the event both meets FERC’s desire and provides the necessary clarity and flexibility for Generator Owners to schedule needed maintenance outages in a manner that supports BES reliability and keeps generators online.	
Likes 0	
Dislikes 0	
Response	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	No
Document Name	
Comment	
PacifiCorp supports EEI comments.	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 6	
Answer	No
Document Name	
Comment	
CEG Supports the NAGF response to this question. Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	

Response
Glen Farmer - Avista - Avista Corporation - 1,3,5
Answer	No
Document Name	
Comment
We support EEi's comments.
Likes 0	
Dislikes 0	
Response
Mike Magruder - Avista - Avista Corporation - 1
Answer	No
Document Name	
Comment
See EEI's comments.
Likes 0	
Dislikes 0	
Response
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers
Answer	No
Document Name	
Comment
Ameren supports EEI's and NAGF's comments.
Likes 0	
Dislikes 0	
Response

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	No
Document Name	
Comment	

We at ACES greatly appreciate the tremendous effort put forth by the drafting team in developing the proposed updates to EOP-012-2 in accordance with the FERC directives.

From the perspective of ACES, the proposed modifications to Requirement R6 are an improvement over previous drafts; however, we believe further refinement would be beneficial. We believe that, as written, the timelines identified in Requirement R6 are too ambiguous and may unduly discriminate against a GO based solely upon the date the generating unit(s) experienced a Generator Cold Weather Reliability event.

It is our opinion that any required compliance timelines would be best defined by removing the inherent obscurity associated with using specific calendar days. In short, we recommend using a timeline based solely on a clearly defined quantity of calendar days and removing all references to explicit months and/or days. Please consider the following hypothetical scenarios as an illustration:

- Generating Unit 1 belonging to Entity A experiences a Generator Cold Weather reliability event on October 22nd, 2025. Per the currently proposed version of Requirement R6 Part 6.3.5.1, Entity A has until December 1st, 2026, to implement a CAP.
- Generating Unit 2 belonging to Entity B experiences a Generator Cold Weather reliability event on March 17th, 2025. Per the currently proposed version of Requirement R6 Part 6.3.5.1, Entity B has until December 1st, 2026, to implement a CAP.
- In the above examples, Entity A is allowed 406 calendar days after their event to implement a CAP whereas Entity B is only allowed 260 calendar days after the same event type to do the same.
    - This results in an unequal application of the Reliability Standard by granting Entity A an additional 146 calendar days to complete the same, or substantially similar, compliance activities as Entity B.

It is the viewpoint of ACES that entities should be provided with the **same** length of time to complete compliance activities required by a Reliability Standard. We recommend that the timeline in part 6.3.5.1 be modified to 12 calendar months regardless of when the Generator Cold Weather Event occurs.

Additionally, it is our opinion that the timeline to address similar potential issues across a fleet is too short. We are concerned that a GO with either a large generating fleet (large IOU) or limited resources (small electric cooperative), may not be able to complete all corrective actions on all applicable units within 24 calendar months of the GCWRE. This is especially true when considering that an entity has 12 calendars months following the GCWRE to complete the review required by part 6.2. We recommend that part 6.3.5.2 be modified to 24 calendar months following the development of the CAP as required by part 6.2.

Thus, we recommend modifying Requirement R6 as follows (note: for the sake of brevity, the text for any sections without recommended changes has been omitted):

6.3.5. A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows:

6.3.5.1. For the generating unit experiencing the Generator Cold Weather Reliability Event, no later than twelve (12) calendar months following the Generator Cold Weather Reliability Event.

6.3.5.2. For other generating unit(s) owned by the Generator Owner, no later than twenty-four (24) calendar months following the development of a Corrective Action Plan under Part 6.2.

Likes 0	
Dislikes 0	

Response

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	No
Document Name	
Comment	
Southern Company recommends modifying Requirement 6 to allow 24-calendar months to implement changes to like equipment after the allowed 12-calendar month review of similar units of the GO, per EEI comments.	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Manitoba Hydro recommends that for non-US Registered Entities: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner. A concern with Requirement R6 is that many outages, derates, and start-up failures would have no relationship to the fact that the weather happens to be below freezing when they occur, and an implicit requirement to investigate all outages and derates to rule out freezing equipment and freezing precipitation as causes would result in a disproportionate compliance burden on Canadian entities in regards to documenting which event is a cold weather event and how to differentiate these events from other outages.	
Likes 0	
Dislikes 0	
Response	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	

See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	No
Document Name	
Comment	
As revised, R6 no longer specifies when the Corrective Acton Plan must be developed following a Cold Weather Reliability Event but only states when the corrective actions must be implemented. The standard should be revised to clarify if there is a deadline to develop the CAP. Any repair or modification that can reasonably be completed before December 1st should be completed, however any repair or modification that needs an outage or if qualified materials and people are not available CAP completion may have to wait until the next planned outage. Planned outages are scheduled to maintain reliability. Adding unplanned outages either postpones scheduled outages or forces outages into periods of time when demand is high therefore reducing the reliability to satisfy load requirements. The expertise for making decisions regarding the timing repairs is best left with the GOs, GOPs, and BAs rather than require approval from the CEA for an extension. Furthermore, if the CEA does not approve an extension request the timeframe to complete the corrective actions would be further reduced to a potentially unreasonable duration.	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
As written, the requirement implies that the CAP must be developed while the unit is offline/derated and experiencing the GCWRE. This should be re-written to say "after experiencing a Generator Cold Weather Reliability Event". *The NAGF notes that footnote 10 needs clarity to state that, by adding the event to an already existing CAP, this does not require the creation of a new declaration. As currently structured, it appears that a request for a declaration would need to be made again, which does not address the obligation to complete annual "blade icing and snow-covered solar panel" declarations for many generators.*	
Likes 1	Jennie Wike, N/A, Wike Jennie
Dislikes 0	

Response	
Daniel Gacek - Exelon - 1, Group Name Exelon	
Answer	No
Document Name	
Comment	
Exelon supports the comments submitted by the EEI	
Likes 0	
Dislikes 0	
Response	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3,5 - WECC	
Answer	No
Document Name	
Comment	
PNM agrees with the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	
Avista does not object to the proposed shortened deadlines except for the language in Requirement R6, subpart 6.1.6. We understand 6.1.6 to mean that a GO is to complete freeze protection CAPs on similar equipment vulnerabilities within 24 months, however, we disagree that this is what the Commission directed in Paragraph 68 of the order. What they directed was that corrective actions needed to be taken on “similar equipment on all of its fleet within 24 months of becoming **aware of the freeze issue**.” In other words, the clock should start after the GO has confirmed similar vulnerabilities on similar equipment on other generating resources. To address this issue, Avista suggests adding the following clarifying language to 6.1.6 as suggested below in boldface:	

6.1.6. A review of applicability **to of** similar **freeze protection** equipment **installed on similar generating units within 12 calendar months of the of the Generator Cold Weather Reliability event** by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of **confirming a generating unit has similar equipment vulnerabilities**;

Likes 0	
Dislikes 0	

Response

Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples

Answer	No
Document Name	

Comment

Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI), Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF), and the North American Generator Forum (NAGF) on question 2

Likes 0	
Dislikes 0	

Response

Chantal Mazza - Chantal Mazza On Behalf of: Junji Yamaguchi, Hydro-Quebec (HQ), 1, 5; Nicolas Turcotte, Hydro-Quebec (HQ), 1, 5; - Chantal Mazza

Answer	No
Document Name	

Comment

We support NB Power's comment:

Requirement R6 assumes that Generator Cold Weather Reliability Events are identified based on their definition, but there is a weakness in the definition of Generator Cold Weather Reliability Event that may make it unsuitable for auditing in its present form. The issue stems from the fact that a Generator Cold Weather Reliability Event is defined in terms of “apparent cause”:

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner’s control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage

Thus the definition of Generator Cold Weather Reliability Events is based on apparent causes(s) and Apparent Cause Analysis (ACA).

Referring to *Cause Analysis Methods for NERC, Regional Entities, and Registered Entities – September 2011*, Section 3.4, *Apparent Cause Analysis (quoting Revision 2, dated September 20, 2011 in the version history table)*:

An apparent cause is defined as a determination based on the evaluator's judgment and experience, and where reasonable effort is made to determine WHY the problem occurred. ACA seeks to determine why the problem occurred based on reasonable effort and the investigator's judgment and experience (the investigator is often a subject matter expert.) The emphasis of an ACA is primarily to correct a particular event or problem without a special effort to identify the underlying system or process problems that may have contributed to the problem. Performing an ACA should not prevent the identification and correction of these underlying contributors if they can be discovered and addressed easily. Several tools can be used to accomplish an ACA. One of the simplest and most effective tools is the "why staircase."

NOTE: ACA is not industry standard for system disturbances or major events and is not referenced in the Department of Energy (DOE) Guidelines for Root Cause Analysis. A proper corrective action plan cannot be determined based on apparent causes. To establish proper corrective action plans to prevent reoccurrence, the root causes of the event must be determined. By only looking at apparent causes, the underlying root cause may be overlooked allowing a reoccurrence of the deficiency leading to the event.

Thus, according to NERC's guidelines, an apparent cause is based on the evaluator's judgment and experience, and is not suitable for the determination of a proper corrective action plans. Quoting NERC's guidance, "to establish proper corrective action plans to prevent reoccurrence, the root causes of the event must be determined. By only looking at apparent causes, the underlying root cause may be overlooked, allowing a reoccurrence of the deficiency leading to the event."

In order to determine proper corrective action plans, a proper root cause analysis must be completed; however, undertaking proper root cause analysis requires time, planning, and resources. Moreover, northern and Canadian entities operate in sub-freezing temperatures for substantial parts of each year. Many generator outages, derates, and startup failures occur in sub-freezing temperatures for reasons completely unrelated to "freezing of equipment" or "freezing precipitation." To require that all outages, derates, and startup failures must be investigated to a level to convince an auditor that there is no possible link to freezing weather outside, and thus is not a Generator Cold Weather Reliability Event would impose a disproportionate burden on northern and Canadian entities, many of which have extensive experience operating reliability in sub-freezing temperatures. Exposing northern and Canadian entities to an audit in which their identification of "apparent causes" based on "judgement and experience" is called into question after the fact by an auditor who may not have the background or contextual information about the equipment and may not have had extensive experience with regional weather patterns is likely to lead to inconsistent audit outcomes and disproportionate compliance burden that will do little or nothing to improve system reliability.

The process of selecting generator outages, derates, and startup failures for investigations that would be worthwhile to investigate for possible identification as Generator Cold Weather Reliability Events will necessarily be different from region to region due to regional variations in weather and climate, generating station design, operating experience, and even language (e.g., what Americans call 'sleet' is referred to as 'ice pellets' in Canada). Thus, it is suggested to split the implicit requirement to investigate generator forced outages and derates and startup failures out of Requirement R6 and write a new requirement (here styled R10), something like:

R10. Each Generator Owner of generating units with Extreme Cold Weather Temperatures at or below 32°F/0°C and that self-commit or are required to operate at or below 32°F/0°C shall implement a documented process to identify, investigate, and analyze root causes for the subset of generator forced outages, forced derates, and startup failures that is likely to lead to the identification of Generator Cold Weather Reliability Events. Such a process shall include:

Criteria for selecting candidate generator forced outages, forced derates, and startup failures to be investigated,

A requirement that at least one [or some minimum number] forced outage, forced derate, or startup failure occurring at temperatures at or below 32°F/0°C minimum number be selected for investigation each year unless no such events occur,

A systematic methodology for investigating, analyzing the root causes of, and developing Corrective Action Plans for selected forced outages, forced derates, and startup failures, and

{C}· *Criteria for determining if a generator forced outage, forced derate, or startup failure is in fact a Generator Cold Weather Reliability Event.*

With the addition of a documented process to identify Generator Cold Weather Reliability Events, Requirement R6 could be rewritten to begin:

R6. Each Generator Owner shall, when experiencing a Generator Cold Weather Reliability Event identified pursuant to Requirement R10, develop and implement a Corrective Action Plan(s) to address the identified root causes as follows…

The application of a documented, systematic methodology to select, analyze root causes for, and develop Corrective Action Plans for Generator Cold Weather Reliability Events would lead to more consistent audit outcomes by removing auditor judgment from the evaluation of causal analysis and better reliability outcomes through the completion of properly established Corrective Action Plan(s) based on systematic root cause analysis.

Likes 0	
Dislikes 0	

Response

Nikki Carson-Marquis - Nikki Carson-Marquis On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Nikki Carson-Marquis

Answer	No
Document Name	

Comment

Minnkota Power Cooperative supports comments made by the MRO NSRF and ACES. Addressing these concerns would change Minnkota's vote to a "Yes" vote.

Likes 0	
Dislikes 0	

Response

Ruchi Shah - AES - AES Corporation - 5

Answer	No
Document Name	

Comment

AES US Renewables does not support the language as proposed in part 6.2. For example, we own and operate wind farms in several regions. Although we may utilize similar equipment model across the regions, the weather conditions & the ECWTs faced by each wind farm are different. Therefore, we suggest the following change to the language in part 6.2:

The Generator Owner shall conduct a review of the applicability of the corrective actions from the Corrective Action Plan developed under Part 6.1 to freeze protection measures on similar equipment at other generating unit(s) owned by the Generator Owner **that have been identified as having**

similar vulnerabilities and ECWT and, if corrective actions are applicable, develop or update an existing Corrective Action Plan no later than 12 calendar months following the Generator Cold Weather Reliability Event to address the other unit(s).

We also suggest similar changes to language in part 6.3.5.2. Additionally, we want to note that the FERC Order language in paragraph 68 that directed NERC to modify Requirement R7 of EOP-012-2 to ensure corrective actions are applied to "similar equipment on all of its fleet within 24 months of becoming aware of the freeze issues". Therefore, part 6.3.5.2 should account for the 12 calendar months provided to GOs to conduct their part 6.2 review before the 24 calendar months begin, not 24 months after the Generator Cold Weather Reliability Event:

For other generating unit(s), owned by the Generator Owner, **which have been identified through a 6.2 review that they have similar vulnerabilities and ECWT to another generating unit, owned by the Generator Owner, that experienced a** Generator Cold Weather Reliability Event **shall complete their corrective action** within 24 calendar months **of the completion of their 6.2 review**.

Likes 0	
Dislikes 0	

Response

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5

Answer	No
Document Name	

Comment

NV Energy would recommend the following grammatical modifications:

6.1 The Generator Owner shall develop a Corrective Action Plan for the generating

unit that has experienced experiencing a Generator Cold Weather Reliability Event.

6.3.5.1. For the generating unit that has experienced experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.

Addititionally, NV Energy would recommend that the following modifications be made to 6.3.5.2 to account for the time it may take entities to perform the assessments necessary to determine if additional units have similar vulnerabilities.

6.3.5.2. For other generating unit(s) owned by the Generator Owner, within 24 calendar months of completion of the review required in section 6.2.

The intent is so that after you conduct a review of all equipment to determine if similar vulnerabilities exist (within 12 months of the initial GCWRE as per 6.2), you will then have 24 months to address the similar vulnerabilities across the fleet.

Likes 0	
Dislikes 0	
Response	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	

MRO NSRF would recommend the following grammatical modifications:

6.1 The Generator Owner shall develop a Corrective Action Plan for the generating

unit that **has experienced** a Generator Cold Weather Reliability Event.

6.3.5.1. For the generating unit that **has experienced** the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.

Addititionally, MRO NSRF would recommend that the following modifications be made to 6.3.5.2 to account for the time it may take entities to perform the assessments necessary to determine if additional units have similar vulnerabilities.

6.3.5.2. For other generating unit(s) owned by the Generator Owner, within 24 calendar months of completion of the review required in section 6.2.

The intent is so that after you conduct a review of all equipment to determine if similar vulnerabilities exist (within 12 months of the initial GCWRE as per 6.2), you will then have 24 months to address the similar vulnerabilities across the fleet.

Likes 0	
Dislikes 0	
Response	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	
Answer	No
Document Name	
Comment	

MEC supports EEI and MRO NSRF comments. MEC would cast an affirmative ballot if NAGF comments for Q1, and EEI comments for Questions 2 and 3 are adopted by the SDT.

Likes 0	
Dislikes 0	
Response	

Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
Minnesota Power feels that section 6.1 needs to be clarified to include a required timeline for the CAP.	
Likes 0	
Dislikes 0	
Response	
Richard Vendetti - NextEra Energy - 5	
Answer	No
Document Name	
Comment	
NextEra supports the comments provided from EEI below: As stated in our previous comments, we do not support the language contained in subpart 6.3.5.2, which we believe does not align with requirements associated with subpart 6.2, or paragraph 68 of the June FERC Order that directed NERC to modify Requirement R7 of EOP-012-2 to ensure corrective actions are applied to "similar equipment on all of its fleet within 24 months of **becoming aware of the freeze issues** (*emphasis added*)". We note that the Commission rightly suggested that corrective actions should be completed on other generating units that utilize similar equipment associated with a Generator Cold Weather Reliability Event within 24 months **after becoming aware** of the use of similar equipment on other generating units within their fleet. We further note that GOs are afforded 12 months to assess and determine which of their other generators have similar equipment that share similar risks. Therefore, subpart 6.3.5.2 should account for the 12 months provided to GOs to conduct their 6.2 review before the 24 months begin, not 24 months after the Generator Cold Weather Reliability Event. To address this concern, we offer the following edits in boldface below: **6.5.5.2.** For other generating unit(s), owned by **the a** Generator Owner, **which have been identified through a 6.2 review that they have similar vulnerabilities to another generating unit, owned by the Generator Owner, that experienced a** Generator Cold Weather Reliability Event **shall complete their corrective action** within 24 **of the completion of their 6.2 review**.	
Likes 0	
Dislikes 0	
Response	

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	No
Document Name	
Comment	
AEPC signed on to ACES comments. Please see ACES comments.	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the comments of the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation agrees with the NAGF in that as written the Corrective Action Plan (CAP) must be developed while the generator unit is offline/derated and experiencing the GCWRE. As suggested, could be re-written to say “after experiencing a Generator Cold Weather Reliability Event”. Footnote 10 also need to be clarified. Black Hills Corporation continues to support EEI’s comments that subpart 6.3.5.2. does not align with requirements associated with 6.2. or paragraph 68 of the June FERC Order.	
Likes 0	
Dislikes 0	
Response	

Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	No
Document Name	
Comment	
AZPS agrees with comments submitted by EEI on behalf of its members that the 24 calendar month timeline for completion of corrective actions should begin upon completion of the 6.2 review of similar equipment.	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	No
Document Name	
Comment	
Tri-State Supports the MRO NSRF Comments	
Likes 0	
Dislikes 0	
Response	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	No
Document Name	
Comment	
PGAE supports the NAGF position regarding updating the drafted language for the CAP to be developed after experiencing the event.	
Likes 0	
Dislikes 0	
Response	
Becky Burden - Public Utility District No. 1 of Snohomish County - 5	
Answer	No

Document Name	
Comment	
6.3.5.1 timetable scheme seems arbitrary, requesting simplification to be a time frame alone.	
Likes 0	
Dislikes 0	
Response	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	
Comment	
Vistra agrees with comments made on behalf of EEI.	
Likes 0	
Dislikes 0	
Response	
Jeremy Lawson - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
See Marty Hostler comments.	
Likes 0	
Dislikes 0	
Response	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	No
Document Name	
Comment	

Requirement R6 assumes that Generator Cold Weather Reliability Events are identified based on their definition, but there is a weakness in the definition of Generator Cold Weather Reliability Event that may make it unsuitable for auditing in its present form. The issue stems from the fact that a Generator Cold Weather Reliability Event is defined in terms of "apparent cause":

Generator Cold Weather Reliability Event *– One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:*

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage

Thus, the definition of Generator Cold Weather Reliability Events is based on apparent causes(s) and Apparent Cause Analysis (ACA).

Referring to *Cause Analysis Methods for NERC, Regional Entities, and Registered Entities – September 2011*, Section 3.4, *Apparent Cause Analysis (quoting Revision 2, dated September 20, 2011, in the version history table)*:

An apparent cause is defined as a determination based on the evaluator's judgment and experience, and where reasonable effort is made to determine WHY the problem occurred. ACA seeks to determine why the problem occurred based on reasonable effort and the investigator's judgment and experience (the investigator is often a subject matter expert.) The emphasis of an ACA is primarily to correct a particular event or problem without a special effort to identify the underlying system or process problems that may have contributed to the problem. Performing an ACA should not prevent the identification and correction of these underlying contributors if they can be discovered and addressed easily. Several tools can be used to accomplish an ACA. One of the simplest and most effective tools is the "why staircase."

NOTE: ACA is not industry standard for system disturbances or major events and is not referenced in the Department of Energy (DOE) Guidelines for Root Cause Analysis. A proper corrective action plan cannot be determined based on apparent causes. To establish proper corrective action plans to prevent reoccurrence, the root causes of the event must be determined. By only looking at apparent causes, the underlying root cause may be overlooked allowing a reoccurrence of the deficiency leading to the event.

Thus, according to NERC's guidelines, an apparent cause is based on the evaluator's judgment and experience and is not suitable for the determination of a proper corrective action plans. Quoting NERC's guidance, "to establish proper corrective action plans to prevent reoccurrence, the root causes of the event must be determined. By only looking at apparent causes, the underlying root cause may be overlooked, allowing a reoccurrence of the deficiency leading to the event."

In order to determine proper corrective action plans, a proper root cause analysis must be completed; however, undertaking proper root cause analysis requires time, planning, and resources. Moreover, northern and Canadian entities operate in sub-freezing temperatures for substantial parts of each year. Many generator outages, derates, and startup failures occur in sub-freezing temperatures for reasons completely unrelated to "freezing of equipment" or "freezing precipitation." To require that all outages, derates, and startup failures must be investigated to a level to convince an auditor that there is no possible link to freezing weather outside, and thus is not a Generator Cold Weather Reliability Event would impose a disproportionate burden on northern and Canadian entities, many of which have extensive experience operating reliability in sub-freezing temperatures. Exposing northern and Canadian entities to an audit in which their identification of "apparent causes" based on "judgement and experience" is called into question after the fact by an auditor who may not have the background or contextual information about the equipment and may not have had extensive experience with regional weather patterns is likely to lead to inconsistent audit outcomes and disproportionate compliance burden that will do little or nothing to improve system reliability.

The process of selecting generator outages, derates, and startup failures for investigations that would be worthwhile to investigate for possible identification as Generator Cold Weather Reliability Events will necessarily be different from region to region due to regional variations in weather and climate, generating station design, operating experience, and even language (e.g., what Americans call 'sleet' is referred to as 'ice pellets' in Canada). Thus, it is suggested to split the implicit requirement to investigate generator forced outages and derates and startup failures out of Requirement R6 and write a new requirement (here styled R10), something like:

R10. Each Generator Owner of generating units with Extreme Cold Weather Temperatures at or below 32°F/0°C and that self-commit or are required to operate at or below 32°F/0°C shall implement a documented process to identify, investigate, and analyze root causes for the subset of generator forced outages, forced derates, and startup failures that is likely to lead to the identification of Generator Cold Weather Reliability Events. Such a process shall include:

- *Criteria for selecting candidate generator forced outages, forced derates, and startup failures to be investigated,*
- *A requirement that at least one [or some minimum number] forced outage, forced derate, or startup failure occurring at temperatures at or below 32°F/0°C minimum number be selected for investigation each year unless no such events occur,*
- *A systematic methodology for investigating, analyzing the root causes of, and developing Corrective Action Plans for selected forced outages, forced derates, and startup failures, and*
- *Criteria for determining if a generator forced outage, forced derate, or startup failure is in fact a Generator Cold Weather Reliability Event.*

With the addition of a documented process to identify Generator Cold Weather Reliability Events, Requirement R6 could be rewritten to begin:

R6. Each Generator Owner shall, when experiencing a Generator Cold Weather Reliability Event identified pursuant to Requirement R10, develop and implement a Corrective Action Plan(s) to address the identified root causes as follows…

The application of a documented, systematic methodology to select, analyze root causes for, and develop Corrective Action Plans for Generator Cold Weather Reliability Events would lead to more consistent audit outcomes by removing auditor judgment from the evaluation of causal analysis and better reliability outcomes through the completion of properly established Corrective Action Plan(s) based on systematic root cause analysis.

Likes 0	
Dislikes 0	

Response

Erin Wilson - NB Power Corporation - New Brunswick Power Transmission Corporation - 5

Answer	No
Document Name	

Comment

Requirement R6 assumes that Generator Cold Weather Reliability Events are identified based on their definition, but there is a weakness in the definition of Generator Cold Weather Reliability Event that may make it unsuitable for auditing in its present form. The issue stems from the fact that a Generator Cold Weather Reliability Event is defined in terms of “apparent cause”:

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The process of selecting generator outages, derates, and startup failures for investigations that would be worthwhile to investigate for possible identification as Generator Cold Weather Reliability Events will necessarily be different from region to region due to regional variations in weather and climate, generating station design, operating experience, and even language (e.g., what Americans call 'sleet' is referred to as 'ice pellets' in Canada). Thus, it is suggested to split the implicit requirement to investigate generator forced outages and derates and startup failures out of Requirement R6 and write a new requirement (here styled R10), something like:

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outages, forced derates, and startup failures that is likely to lead to the identification of Generator Cold Weather Reliability Events. Such a process shall include:

{C}· *Criteria for selecting candidate generator forced outages, forced derates, and startup failures to be investigated,*

{C}· *A requirement that at least one [or some minimum number] forced outage, forced derate, or startup failure occurring at temperatures at or below 32°F/0°C minimum number be selected for investigation each year unless no such events occur,*

{C}· *A systematic methodology for investigating, analyzing the root causes of, and developing Corrective Action Plans for selected forced outages, forced derates, and startup failures, and*

{C}· *Criteria for determining if a generator forced outage, forced derate, or startup failure is in fact a Generator Cold Weather Reliability Event.*

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The application of a documented, systematic methodology to select, analyze root causes for, and develop Corrective Action Plans for Generator Cold Weather Reliability Events would lead to more consistent audit outcomes by removing auditor judgment from the evaluation of causal analysis and better reliability outcomes through the completion of properly established Corrective Action Plan(s) based on systematic root cause analysis.

Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer	No
Document Name	

Comment

As stated in our previous comments, we do not support the language contained in subpart 6.3.5.2, which we believe does not align with requirements associated with subpart 6.2, or paragraph 68 of the June FERC Order that directed NERC to modify Requirement R7 of EOP-012-2 to ensure corrective actions are applied to "similar equipment on all of its fleet within 24 months of **becoming aware of the freeze issues** (*emphasis added*)". We note that the Commission rightly suggested that corrective actions should be completed on other generating units that utilize similar equipment associated with a Generator Cold Weather Reliability Event within 24 months **after becoming aware** of the use of similar equipment on other generating units within their fleet. We further note that GOs are afforded 12 months to assess and determine which of their other generators have similar equipment that share similar risks. Therefore, subpart 6.3.5.2 should account for the 12 months provided to GOs to conduct their 6.2 review before the 24 months begin, not 24 months after the Generator Cold Weather Reliability Event. To address this concern, we offer the following edits in boldface below:

6.5.5.2. For other generating unit(s), owned by **a** Generator Owner, **which have been identified through a 6.2 review that they have similar vulnerabilities to another generating unit, owned by the Generator Owner, that experienced a** Generator Cold Weather Reliability Event **shall complete their corrective action** within 24 **of the completion of their 6.2 review**.

Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	

Response

Mason Jones - Mason Jones On Behalf of: Michael Whitney, Northern California Power Agency, 4, 6, 3, 5; - Mason Jones

Answer	No
Document Name	

Comment

This, also creates an unfair competitive advantage. Forcing some entities pay for the development of correction action plans requiring them to make modifications to operate at a temperature they were designed, built, or financed to operate at. This shows no regard to affordability, competitiveness, or ensured cost recovery for providing a higher level of reliability above and beyond what other generators are required to provide.

Likes 0	
Dislikes 0	

Response

Michael Whitney - Northern California Power Agency - 3, Group Name NCPA

Answer	No
Document Name	

Comment

See Marty Hostler comments.

Likes 0	
Dislikes 0	

Response

Marty Hostler - Northern California Power Agency - 4

Answer	No
Document Name	

Comment

NO. This, also creates an unfair competitive advantage. Forcing some entities pay for the development of correction action plans that require them to make modifications to operate at temperatures they were not designed, built, or financed to operate at creates an unfair competitive disadvantage for some and advantage for others. This shows no regard to affordability, competitiveness, or ensured cost recovery for providing a higher level of reliability above and beyond what other generators are required to provide.

Likes 0	
Dislikes 0	

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5

Answer	No
Document Name	

Comment

While the proposed language does respond to the FERC Order Paragraph 8, the forced use of the CAP Extension Process to address those larger or complicated CAP implementations that may require more than 12 months seems to add excessive administration efforts for entities. Lead times for materials or parts can exceed 18 months, language to allow CAP actions affected by long lead times to exceed past the "first day of the first December" would allow entities to focus more on implementation of the CAPs rather than administering extension of CAPs. Providing requirement language that has specific "large and complex" considerations could allow entities needed flexibility to develop accurate CAPs initially and not be forced into the extension process. The FERC Order Paragraph 68 does seem to indicate allowance for up to 48 months on CAP(s) if such conditions exist and the CAP takes a staged approach.

Likes 0	
Dislikes 0	

Response

Martin Sidor - NRG - NRG Energy, Inc. - 6

Answer	No
Document Name	

Comment

While the proposed language does respond to the FERC Order Paragraph 8, the forced use of the CAP Extension Process to address those larger or complicated CAP implementations that may require more than 12 months seems to add excessive administration efforts for entities. Lead times for materials or parts can exceed 18 months, language to allow CAP actions affected by long lead times to exceed past the "first day of the first December" would allow entities to focus more on implementation of the CAPs rather than administering extension of CAPs. Providing requirement language that has specific "large and complex" considerations could allow entities needed flexibility to develop accurate CAPs initially and not be forced into the extension process. The FERC Order Paragraph 68 does seem to indicate allowance for up to 48 months on CAP(s) if such conditions exist and the CAP takes a staged approach.

Likes 0	

Dislikes 0	
Response	
Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
Talen supports the comments of the NAGF on this issue, and adds that the, “first day of the first December following the Generator Cold Weather Reliability Event,” deadline in R6.3.5.1 is unrealistic for completing an analysis, identifying a root cause, weighing corrective action alternatives, preparing a specification, collecting competing bids, awarding a contract, designing equipment, procuring materials and installing retrofits (without interfering with the summer peak season). The time frame allowed should be two years, the same as in R6.3.5.2. also, change the 45 days deadline in the 2nd bullet point of R8.1 to 90 days.	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	No
Document Name	
Comment	
Req 6.2 allows 12 months for the development of a CAP plan. If CAP plan development actually takes 12 months, the entity would only have the remaining 12 months if the 24 calendar months from the Generator Cold Weather reliability event to implement the CAP plan across the rest of the fleet. This could prove problematic based on the nature of the event and remediation required. Does NERC anticipate that the Generator Cold Weather Constraint process will address this concern?	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	

Reclamation does not agree. Shortening time frames to 24 months does not alleviate the burden of lack of material, contracting resources, outages or other schedulable items.

Likes 0	
Dislikes 0	

Response

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF

Answer	No
Document Name	

Comment

The time required of the December 1st date is too restrictive for most mod projects. Duke Energy does not support the language used in requirement R6.3.5.1 which requires the resolution of all winter event corrective actions by December 1st of the following year. This interval is too restrictive to allow for evaluation and correction on many freeze protection repairs or for the installation of new freeze protection measures. The inadequacies of this time interval are compounded when the effects of a major winter storm are considered. Large storms, like Elliott or a Polar Vortex, impact multiple units across multiple utilities. It would be difficult for a GO to address multiple events in this timeframe with available vendor support, and competing vendor availability with other utilities will only exacerbate this situation. Maintaining R6.3.5.1 as proposed will also result in higher levels of extension approvals for CEAs to process. Duke Energy recommends the requirement be modified to a period of 24 calendar months.

Likes 0	
Dislikes 0	

Response

Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)

Answer	Yes
Document Name	

Comment

The SRC recommends that Requirement R6, Part 6.4 be revised to include a timeline for submitting extension requests (for example, 60 days before the first deadline that would be impacted by the extension request). This would help reduce last-minute extension requests and ensure the CEA has adequate time to review and process extension requests.

Likes 0	
Dislikes 0	

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter

Answer	Yes
Document Name	
Comment	
FirstEnergy believes compliance with R7 should be reasonably achievable. Please see the additional comments regarding deadline extensions.	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC	
Answer	Yes
Document Name	
Comment	
WECC appreciates the efforts in clarifying this Requirement. The DT should consider adding additional language to clarify the following: If a unit has a Generator Cold Weather Reliability event and creates a CAP then subsequentially declares a Generator Cold Weather Constraint—what happens if another GCWRE occurs for the same cause (e.g., blade icing)? Standard language tends to possibly be interpreted as requiring a new CAP and new declaration. A footnote exists for updating a CAP and the NERC process covers updating Generator Cold Weather Constraints for "other" units. Suggest the following: 8.4 If a validated declared Generator Cold Weather Constraint exists for a generating unit(s), a Generator Owner that experiences a Generator Cold Weather Reliability Event for the generating unit(s) shall review the cause(s) of the Generator Cold Weather Reliability Event. If the cause(s) are the same for the existing validated Generator Cold Weather Constraint, no Corrective Action Plan or subsequent re-declaration of the Generator Cold Weather Constraint is required. M8 Language: Each Generator Owner shall have dated evidence that demonstrates it performed the actions in accordance with Requirement R8. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): a copy of the Generator Cold Weather Constraint declaration, evidence the declaration was provided to the Compliance Enforcement Authority in accordance with the specified timeframe, records that document update(s) to the operating limitations, as needed, and updated Corrective Action Plan(s), if applicable, and documentation of Generator Cold Weather Reliability Event cause reviews.	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tony Hua - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Dillard - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Lovita Griffin - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
Texas RE is concerned that there is the potential for confusion regarding when a Corrective Action Plan (CAP) should be developed and implemented. The verbiage of Requirement R6 could potentially be read to imply that a CAP must be developed concurrently with a "Generator Cold Weather Reliability Event" (as indicated by the language "when experiencing a Generator Cold Weather Reliability Event"). Texas RE recommends clarifying that CAP development and implementation can occur *following* the Generator Cold Weather Reliability Event. The proposed measures are clear that CAPs should be developed **following** a Generator Cold Weather Event. Texas RE recommends similar language be included in the requirement language itself to avoid any possible confusion.	
Likes 0	
Dislikes 0	
Response	
Darcy O'Connell - California ISO - 2	
Answer	
Document Name	
Comment	

CAISO agrees with comments submitted by the ISO/RTO Counsel (IRC) Standards Review Committee	
Likes 0	
Dislikes 0	
Response	

3. In paragraph 72 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to clarify that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

The drafting team provided updated language in Requirement R2 to address the issue of units in different stages of design and construction to support meeting this directive. June 29, 2023 was chosen as a date of demarcation, as that was the date the Extreme Cold Weather Temperature was settled upon, after the approval date of February 16, 2023. Do you agree that the industry driven edits to Requirement R2 are responsive to the FERC directives? If you do not agree, please provide your language change suggestions for the drafting team.

Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
Talen supports the comments of the NAGF on this issue.	
Likes 0	
Dislikes 0	
Response	

Marty Hostler - Northern California Power Agency - 4	
Answer	No
Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	

Michael Whitney - Northern California Power Agency - 3, Group Name NCPA	
Answer	No
Document Name	
Comment	

See Marty Hostler comments.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	
EEI does not agree with aligning GO compliance for Requirement R2 to the June 29, 2023 date. While we do not dispute that "June 29, 2023, may have been chosen as a date of demarcation" for the settlement of the definition Extreme Cold Weather Temperature, what matters is when the compliance obligations within Requirement R2 became enforceable. EEI notes that EOP-012-2 Enforcement date of EOP-012-2 is June 27, 2024, therefore this should be the date when GOs are held accountable for the R2 Requirement. To hold GOs accountable to requirements prior to the Enforcement Date of a Reliability Standard is unjustified and should be changed.	
Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	
Response	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	No
Document Name	
Comment	
Suggest expanding on footnote 4 and 6 in the Standard explaining the rationale for the June 29, 2023, date (and/or a reference/link to the FERC Order approving the ECWT definition).	
Likes 0	
Dislikes 0	
Response	
Jeremy Lawson - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	

Comment	
See Marty Hostler comments.	
Likes 0	
Dislikes 0	
Response	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	
Comment	
Vistra agrees with comments made on behalf of EEI.	
Likes 0	
Dislikes 0	
Response	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	No
Document Name	
Comment	
PGAE supports the NAGF position regarding suggested revisions to Attachment 1 Known Constraints timeline.	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	No
Document Name	
Comment	

Requirement R2 specifies an April 1, 2028 date to complete CAPs for generating units that begin commercial operation on or after October 1, 2027 and which committed to design criteria before the date of the ECWT definition was approved be FERC or other applicable government authority in non-US jurisdictions. The Technical Rationale clarifies that the April 1, 2028 was selected based on the EOP-012-1 adoption timelines in the US, and that a footnote has been added to allow for date adjustments needed for Canadian entities. The posted EOP-012-3 Draft 2 does not appear to include such a footnote. BC Hydro asks that at a minimum, a footnote be added to this effect.

Similar to comments submitted on the previous draft, BC Hydro recommends that instead of referencing specific dates in the body of a Requirement, appropriate wording clarifying the compliance enforcement date's determination, such as, in case of Footnote 4 as an example, "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction" be used instead. The specific date for US enforcement could be added in a footnote or other associated documentation, such as compliance implementation or CMEP guidance documents. This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada.

Likes 0	
Dislikes 0	

Response

Donna Wood - Tri-State G and T Association, Inc. - 1

Answer	No
Document Name	

Comment

Tri-State Supports the MRO NSRF Comments

Likes 0	
Dislikes 0	

Response

Andrew Smith - APS - Arizona Public Service Co. - 5

Answer	No
Document Name	

Comment

AZPS agrees with comments submitted by EEI on behalf of its members that the date of demarcation should be the enforcement date of the Standard and not tied to the date for the ECWT definition.

Likes 0	
Dislikes 0	

Response

Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation does not agree with the updated language for Requirement R2; we do not support any imposition of any requirement within a NERC Reliability Standard that intends to impose legal obligations retroactively.	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the comments of the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	No
Document Name	
Comment	
AEPC signed on to ACES comments. Please see ACES comments.	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No

Document Name	
Comment	
Minnesota Power believes that the R2.2 contractually committed to design criteria date should be the effective date of the standard (October 1, 2024).	
Likes 0	
Dislikes 0	
Response	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	
Answer	No
Document Name	
Comment	
MEC supports EEI and MRO NSRF comments. MEC would cast an affirmative ballot if NAGF comments for Q1, and EEI comments for Questions 2 and 3 are adopted by the SDT.	
Likes 0	
Dislikes 0	
Response	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	
MRO NSRF believes that this should be the date that a standard became effective which brought the term ECWT became part of a Reliability Standard that is Subject to Enforcement, which occurred when EOP-012-2 became effective on 10/1/2024 for US Entities.	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No

Document Name	
Comment	
NV Energy believes that this should be the date that a standard became effective which brought the term ECWT became part of a Reliability Standard that is Subject to Enforcement, which occurred when EOP-012-2 became effective on 10/1/2024 for US Entities.	
Likes 0	
Dislikes 0	
Response	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
While AES US Renewables appreciates the intent of the February 16, 2023 date, we do not agree that compliance date should be aligned to a glossary term, rather it should be aligned to the implementation plan of EOP-012-1 as that is usually what registered entities are held accountable to. In the case of EOP-012-1's implementation plan, the effective date is supposed to be 10/1/2024. Therefore, we request that the drafting team revise the June 29, 2023 date to October 1, 2024.	
Likes 0	
Dislikes 0	
Response	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) on question 3	
Likes 0	
Dislikes 0	
Response	
Robert Follini - Avista - Avista Corporation - 3	

Answer	No
Document Name	
Comment	

Although the changes made to Requirements R6 and R7 comply with the intent of the FERC Order, there needs to be more detail defining the timelines associated with the CEA reviews and determinations. We further ask that consideration be given to including an appeals process for a denial of a Corrective Action Plan extension. While we understand that NERC is not bound to Requirements contained in Reliability Standards, determinations that represent the denial of a CAP extension may be caused by a misunderstanding or missing information that can be resolved through an appeals process.

Avista additionally questions the value of Footnotes 11 and 12, which state that extension requests will be evaluated in accordance with NERC processes and extension requests for non US-Registered entities should be implemented in a manner consistent with the responsible government authority. Given NERC or applicable governmental authorities or agencies in non-US jurisdiction are not subject to Requirements within NERC Reliability Standards, these footnotes have no utility and should be removed.

Likes 0	
Dislikes 0	
Response	

Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3,5 - WECC

Answer	No
Document Name	
Comment	

PNM agrees with comments of EEI

Likes 0	
Dislikes 0	
Response	

Daniel Gacek - Exelon - 1, Group Name Exelon

Answer	No
Document Name	
Comment	

Exelon supports the comments submitted by the EEI	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
The NAGF does not agree with the updated language for Requirement R2. The proposed NAGF modifications to Attachment 1 identified under Question 1 need to be incorporated into Requirement R2 or Attachment 1 to address the NAGF concerns.	
Likes 0	
Dislikes 0	
Response	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	
See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	

Manitoba Hydro recommends **all** dates specified in R2 include: In non-US jurisdictions, use the effective date for the EOP-012-3 standard, as the applicability criteria for the Generator Owner first contractual commitment to design criteria, thus avoiding retroactively imposing compliance obligations through new or revised requirements.

Likes 0	
Dislikes 0	

Response

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company

Answer	No
Document Name	

Comment

Southern Company agrees with the recommendations by EEI regarding the enforcement date.

Likes 0	
Dislikes 0	

Response

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators

Answer	No
Document Name	

Comment

It is the opinion of ACES that the current language of Requirement 2.1 is not responsive to paragraph 72 of the FERC directive. This paragraph does not explicitly require a corrective action plan (“CAP”), merely that, if a CAP is needed, “…it should be completed by the time that such generating units go into commercial operation.” In our judgment, a provision within Requirement R2 to develop and implement a CAP prior to beginning commercial operations is reasonable, sensible, and in-line with the industry standard CAP process. We contend that by directing that a CAP must be completed prior to beginning commercial operations, FERC has rendered said CAP process both superfluous and moot for Requirement R2.

In brief, if GOs must implement freeze protection measures on a new generating unit(s) prior to beginning commercial operation, why does it matter which process the GO followed to implement said measures? Therefore, ACES recommends removing the date of demarcation entirely and striking any provisions for a CAP from Requirement R2.

However, if the SDT is unwaveringly committed to including a conditional provision for including a CAP process then, in the opinion of ACES, the date of demarcation for contractual commitments is best defined by the effective date of EOP-012-2. It is our perspective that Implementation Plans are a useful and valuable tool that provide the industry with time to interpret and implement any required compliance actions or activities.

Succinctly stated, it is our opinion that the SDT should **not** break from established precedent by tying the compliance date to the governmental authority approval date in lieu of the effective date of the NERC Standard.

To comply with the FERC directive, ACES recommends using language that is substantially similar to EOP-012-2 as demonstrated below:

R2. Applicable to generating units that begin commercial operation on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below thirty-two (32) degrees Fahrenheit (zero (0) degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of thirty-two (32) degrees Fahrenheit (zero (0) degrees Celsius), shall:

2.1. Prior to beginning commercial operations, implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (thirty-two (32) km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or

2.2 Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

Likes 0	
Dislikes 0	

Response

Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers

Answer	No
Document Name	

Comment

Ameren supports EEI's and NAGF's comments.

Likes 0	
Dislikes 0	

Response

Glen Farmer - Avista - Avista Corporation - 1,3,5

Answer	No
Document Name	

Comment

We support EEi's comments.

Likes 0	
Dislikes 0	

Response

Kimberly Turco - Constellation - 6	
Answer	No
Document Name	
Comment	
CEG Supports the NAGF response to this question. Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	No
Document Name	
Comment	
PacifiCorp supports EEI comments.	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	No
Document Name	
Comment	
Request: Revise the second bullet point in Part 2.1 as follows: “Develop, implement, and complete by ***the earlier of*** April 1, 2028, ***or the generating unit’s commercial operation date*** a Corrective Action Plan . . . .” **Justification:** The SRC believes the updated language in Requirement R2 does not fully respond to FERC’s directive. Specifically, FERC’s directive in paragraph 72 of the June 2024 Order requires that “any Requirement R2 corrective action plans must be completed prior to the generating unit’s commercial operation date.” Under Part 2.1 of Requirement R2, a unit is not required to complete its Corrective Action Plan until April 1, 2028, and a unit that enters commercial operations before that date might still have an incomplete Corrective Action Plan, which is not a permissible scenario under	

FERC's directive. To address this issue, the SRC recommends the following revision to the second bullet point in Part 2.1: "Develop, implement, and complete by ***the earlier of*** April 1, 2028, ***or the generating unit's commercial operation date*** a Corrective Action Plan . . . ."

Footnotes 4 and 6: Additionally, it is not clear which applicable governmental authority approval date footnotes 4 and 6 refer to. The SRC recommends that these footnotes be clarified as follows: " . . . use the date **EOP-012-1 was** approved . . ."

Likes 0	
Dislikes 0	

Response

Rhonda Jones - Invenergy LLC - 5

Answer	No
Document Name	

Comment

The drafting team provided updated language in Requirement R2 to address the issue of units in different stages of design and construction to support meeting this directive. June 29, 2023 was chosen as a date of demarcation, as that was the date the Extreme Cold Weather Temperature was settled upon, after the approval date of February 16, 2023. Do you agree that the industry driven edits to Requirement R2 are responsive to the FERC directives? If you do not agree, please provide your language change suggestions for the drafting team.

Likes 0	
Dislikes 0	

Response

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF

Answer	Yes
Document Name	

Comment

None.

Likes 0	
Dislikes 0	

Response

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC	
Answer	Yes
Document Name	
Comment	
WECC appreciates the efforts to provide a smoother path to reliability for units being considered, under construction, and near commercial operation.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
No additional comments.	
Likes 0	
Dislikes 0	
Response	
Erin Wilson - NB Power Corporation - New Brunswick Power Transmission Corporation - 5	
Answer	Yes
Document Name	
Comment	
Suggest expanding on footnote 4 and 6 in the Standard explaining the rationale for the June 29, 2023, date (and/or a reference/link to the FERC Order approving the ECWT definition).	
Likes 0	
Dislikes 0	
Response	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes

Document Name	
Comment	
Suggest expanding on footnote 4 and 6 in the Standard explaining the rationale for the June 29, 2023 date (and/or a reference/link to the FERC Order approving the ECWT definition).	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
Suggest expanding on footnote 4 and 6 in the Standard explaining the rationale for the June 29, 2023, date (and/or a reference/link to the FERC Order approving the ECWT definition).	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Lovita Griffin - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Dillard - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Tony Hua - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Becky Burden - Public Utility District No. 1 of Snohomish County - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Nikki Carson-Marquis - Nikki Carson-Marquis On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Nikki Carson-Marquis	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Colin Chilcoat - Invenergy LLC - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Richard Vendetti - NextEra Energy - 5	
Answer	
Document Name	
Comment	

NextEra supports the comments provided from EEI below:

EEI does not agree with aligning GO compliance for Requirement R2 to the June 29, 2023 date. While we do not dispute that "June 29, 2023, may have been chosen as a date of demarcation" for the settlement of the definition Extreme Cold Weather Temperature, what matters is when the compliance obligations within Requirement R2 became enforceable. EEI notes that EOP-012-2 Enforcement date of EOP-012-2 is June 27, 2024, therefore this should be the date when GOs are held accountable for the R2 Requirement. To hold GOs accountable to requirements prior to the Enforcement Date of a Reliability Standard is unjustified and should be changed.

Likes 0	
Dislikes 0	

Response

Darcy O'Connell - California ISO - 2

Answer	
Document Name	

Comment

CAISO agrees with comments submitted by the ISO/RTO Counsel (IRC) Standards Review Committee

Likes 0	
Dislikes 0	

Response

Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper

Answer	
Document Name	

Comment

No Comment.

Likes 0	
Dislikes 0	

Response

Mike Magruder - Avista - Avista Corporation - 1	
Answer	
Document Name	
Comment	
See EEI's comments.	
Likes 0	
Dislikes 0	
Response	

4. In paragraph 94 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R8, Part 8.1 of Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations (than every five years) to verify that the declaration remains valid.

Based on industry feedback, the drafting team created Requirement 9 to require review every 36 calendar months. Do you agree that the revision addresses this directive and provides an effective balance with administrative efforts to ensure Generator Cold Weather Constraints remain valid? If you do not agree, please provide your language change suggestions for the drafting team.

Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	No
Document Name	
Comment	

Constraints determined to be invalid: The SRC recommends that Requirement R9 be revised to specify the Generator Owner would need to implement freeze protection measures or develop a Corrective Action Plan as required by Requirement R7 if a Generator Owner determines that a previously validated Generator Cold Weather Constraint is no longer valid as a result of its periodic review.

As Requirement R9 is currently drafted, it is not clear to the SRC how long a Generator Owner would have to implement new freeze protection measures, develop and implement a Corrective Action Plan under Requirement R7, or take any other actions that may be needed as a result of a constraint no longer being valid.

Knowledge of changed circumstances: Additionally, the SRC recommends that Requirement R9 be revised as follows to require Generator Owners to react to knowledge of changed circumstances outside of the 36-month review cycle, such as any NERC Alerts or other guidance NERC or FERC might issue as part of their oversight of the constraint declaration process and the technological state of freeze protection measures in the industry:

“The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. ***The Generator Owner shall also review each Generator Cold Weather Constraint declaration validated by the CEA upon gaining actual or constructive knowledge of a material change in the circumstances that formed the basis for the Generator Cold Weather Constraint declaration to determine if it remains valid in accordance with Attachment 1.***”

CEA submission: Finally, the SRC recommends that Requirement R9 be revised to require the Generator Owner to submit the results of each constraint review to the CEA. This would provide the CEA additional insight into the overall state and usage of constraints within the industry, and may help the CEA stay informed of the overall pace of changes of freeze protection technology within the industry. It would also help NERC maintain a database of best practices and technological advancements, as recommended in the SRC’s response to question 1.

Likes 0	
Dislikes 0	

Response	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	No
Document Name	
Comment	
We support EEi's comments.	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Reviewing the Generator Cold Weather Constraints declaration more frequently than reviewing the Generating Unit's Cold Weather Preparedness plan (R1 - 5 calendar years) will not improve BES reliability in Manitoba where we seasonally operate near our ECWT for extended periods of time. Our generating units must operate reliably every winter season. Reviewing Generator Cold Weather Constraints every 36 months to see if they remain valid will be an additional administrative burden for utilities operating in Canada.	
Likes 0	
Dislikes 0	
Response	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	No
Document Name	
Comment	
R9 places the burden on the GO to determine if a constraint remains valid in accordance with Attachment 1. As previously stated in the comments to question 1, Attachment 1 does not provide objective and sufficiently detailed criteria for applicable entities to understand what is required of them. There is no certainty for the GO that the CEA or auditor will agree with subsequent determinations that a constraint remains valid which creates unnecessary compliance risks. Furthermore, if the SDT believes that the GO can make subsequent determinations of the validity of constraints based	

on the criteria of Attachment 1 then it should not be necessary to require CEA approval of the initial constraint declaration as the criteria would be the same for the initial and subsequent determinations.	
Likes 0	
Dislikes 0	
Response	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	
While Avista appreciates the intent of the February 16, 2023, date, we do not agree that compliance date should be aligned to when a glossary term is approved. We also note that there are other changes within the proposed standard that could impact what an entity includes in the design of their resource beyond the definition of Extreme Cold Weather Temperature, including the proposed definition of Generator Cold Weather Constraint. For this reason, we ask that the date used for Requirement R2, subparts 2.1 and 2.2 for new resources should be the approval of this Standard. NERC Reliability Standards should be forward looking and should not be aligned to compliance measures or dates from previous versions of Reliability Standards or approval dates of Glossary Terms.	
Likes 0	
Dislikes 0	
Response	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	
Comment	
Vistra agrees with comments made by Entergy.	
Likes 0	
Dislikes 0	
Response	
Jeremy Lawson - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	

Comment	
See Marty Hostler comments.	
Likes 0	
Dislikes 0	
Response	
Michael Whitney - Northern California Power Agency - 3, Group Name NCPA	
Answer	No
Document Name	
Comment	
See Marty Hostler comments.	
Likes 0	
Dislikes 0	
Response	
Mason Jones - Mason Jones On Behalf of: Michael Whitney, Northern California Power Agency, 4, 6, 3, 5; - Mason Jones	
Answer	No
Document Name	
Comment	
See response to #2.	
Likes 0	
Dislikes 0	
Response	
Marty Hostler - Northern California Power Agency - 4	
Answer	No
Document Name	
Comment	

NO. See response to #2.

Likes 0	
Dislikes 0	

Response

Julie Hall - Entergy - 6, Group Name Entergy

Answer	No
Document Name	

Comment

For “known” constraints, a longer timeframe, such as 5 years, would be more applicable to reduce administrative burden on the entity.

Likes 0	
Dislikes 0	

Response

Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6

Answer	Yes
Document Name	

Comment

PacifiCorp supports EEI comments.

Likes 0	
Dislikes 0	

Response

Kimberly Turco - Constellation - 6

Answer	Yes
Document Name	

Comment

CEG Supports the NAGF response to this question.

Kimberly Turco on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators

Answer	Yes
Document Name	

Comment

ACES agrees with the approach taken by the SDT to create a new Requirement R9 stipulating periodicity of the reviews. We believe this is the cleanest and most straightforward approach to address paragraph 94 of the FERC directive.

Likes 0	
Dislikes 0	

Response

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company

Answer	Yes
Document Name	

Comment

Southern Company agrees with EEI and requests the SDT to consider changing the required review period for GCWC declarations in Requirement 9 from 36-calendar months to 3 years.

Likes 0	
Dislikes 0	

Response

Selene Willis - Edison International - Southern California Edison Company - 5

Answer	Yes
Document Name	

Comment

See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Daniel Gacek - Exelon - 1, Group Name Exelon	
Answer	Yes
Document Name	
Comment	
Exelon supports the comments submitted by the EEI	
Likes 0	
Dislikes 0	
Response	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3,5 - WECC	
Answer	Yes
Document Name	
Comment	
PNM agrees with comments of EEI	
Likes 0	
Dislikes 0	
Response	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	Yes
Document Name	
Comment	

Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) on question 4	
Likes 0	
Dislikes 0	
Response	
Mary Smith - Southern Indiana Gas and Electric Co. - 1,3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
SIGE supports EEI comments.	
Likes 0	
Dislikes 0	
Response	
Nikki Carson-Marquis - Nikki Carson-Marquis On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Nikki Carson-Marquis	
Answer	Yes
Document Name	
Comment	
Minnkota Power Cooperative supports comments made by the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	

NV Energy agrees that the revision addresses this directive and provides an effective balance with administrative efforts, however NV Energy would prefer the use of 3 calendar years instead of 36 calendar months to allow more flexibility in timing the analysis while not substantially impacting the frequency that the analysis occurs.

Likes 0	
Dislikes 0	

Response

Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group

Answer	Yes
Document Name	

Comment

MRO NSRF agrees that the revision addresses this directive and provides an effective balance with administrative efforts, however MRO NSRF would prefer the use of 3 calendar years instead of 36 calendar months to allow more flexibility in timing the analysis while not substantially impacting the frequency that the analysis occurs.

Likes 0	
Dislikes 0	

Response

Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3

Answer	Yes
Document Name	

Comment

MEC supports EEI and MRO NSRF comments.

Likes 0	
Dislikes 0	

Response

Richard Vendetti - NextEra Energy - 5

Answer	Yes
Document Name	

Comment

NextEra supports the comments provided from EEI below:

EEI does not object to including a requirement to review Generator Cold Weather Constraints every 36 calendar months to address the Commission's concerns as described in paragraph 94, however EEI requests that the Drafting Team consider changing the proposed 36 calendar month review cycle to 3 calendar years in order to allow for more flexibility in timing entity reviews.

Likes 0	
Dislikes 0	

Response

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1

Answer	Yes
Document Name	

Comment

AEPC signed on to ACES comments. Please see ACES comments.

Likes 0	
Dislikes 0	

Response

Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group

Answer	Yes
Document Name	

Comment

WEC Energy Group support the comments of the MRO NSRF.

Likes 0	
Dislikes 0	

Response

Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments

Answer	Yes
Document Name	

Comment	
Black Hills Corporation feels that the review of every 36 calendar months to be fair.	
Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
AZPS agrees with this approach	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
AEP has no objections in requiring review every 36 calendar months.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	

EEI does not object to including a requirement to review Generator Cold Weather Constraints every 36 calendar months to address the Commission's concerns as described in paragraph 94, however EEI requests that the Drafting Team consider changing the proposed 36 calendar month review cycle to 3 calendar years in order to allow for more flexibility in timing entity reviews.

Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter

Answer	Yes
Document Name	

Comment

FirstEnergy does believe compliance to R8 should be achievable, but not preferred. The 5- year review cycle would span the typical generating unit planned outage cycle of 36-48 months, which promotes efficient planning and execution of winterization system/equipment upgrades necessary to eliminate constraints.

Likes 0	
Dislikes 0	

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5

Answer	Yes
Document Name	

Comment

Overall this language works for GOs. NRG has a concern with the period from when an owner submits a Generator Cold Weather Constraint request and when a determination is finally made. Is that considered a "grace period" while awaiting the determination? What happens if the CEA review takes a long time, are there remedies or extensions that can be allowed if a CAP must be developed instead? Would this be part of the CEA's process?

Likes 0	
Dislikes 0	

Response

Martin Sidor - NRG - NRG Energy, Inc. - 6

Answer	Yes
Document Name	

Comment	
Overall this language works for GOs. NRG has a concern with the period from when an owner submits a Generator Cold Weather Constraint request and when a determination is finally made. Is that considered a "grace period" while awaiting the determination? What happens if the CEA review takes a long time, are there remedies or extensions that can be allowed if a CAP must be developed instead? Would this be part of the CEA's process?	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Rhonda Jones - Invenergy LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Colin Chilcoat - Invenergy LLC - 6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruchi Shah - AES - AES Corporation - 5	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Becky Burden - Public Utility District No. 1 of Snohomish County - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Erin Wilson - NB Power Corporation - New Brunswick Power Transmission Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Tony Hua - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Dillard - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Lovita Griffin - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donald Lock - Talen Generation, LLC - 5	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	
Document Name	
Comment	
See EEI's comments.	
Likes 0	

Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
Texas RE agrees with the 36-month review of the Generator Cold Weather Constraints. Texas RE recommends, however, that there be an explicit requirement to submit any significant updates to the CEA, since the Constraints are submitted to the CEA initially.	
Likes 0	
Dislikes 0	
Response	
Darcy O'Connell - California ISO - 2	
Answer	
Document Name	
Comment	
CAISO agrees with comments submitted by the ISO/RTO Counsel (IRC) Standards Review Committee	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC	
Answer	
Document Name	
Comment	
WECC appreciates the separation of this responsibility into a new Requirement and believes the 36 calendar months is an adequate timeframe for reviews to occur.	
Likes 0	
Dislikes 0	

Response

5. Please provide any additional comments for the standard drafting team to consider, if desired.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Donald Lock - Talen Generation, LLC - 5	
Answer	
Document Name	
Comment	
Talen supports the comments of the NAGF, and adds: 1. Replace, “and adjustments utilized for missing or invalid hourly temperature data, if necessary,” in R1 and M1 with a footnote stating, “NOAA and ASOS data are deemed adequate as-is, and bad data points may be expunged. An alternative weather station must be used for filling the gap, however, if the one selected for ECWT calculations does not have records going back to 1/1/2000.” The reason for this change is that statistical analysis exists for the purpose of quickly developing an approximate answer that is close enough for all practical purposes, so seeking 100.000% exactness in the ECWT calculation does nothing but divert effort and attention from the important freeze prevention work to be done, especially since NERC’s 0.2 percentile criterion is simply a benchmark and has no inherent BES reliability significance. 2. Replace, “provide the capability,” in R2 with, “are designed to provide the capability.” Our #1 freeze prevention problem is heat tracing/insulation systems that are oversold and/or mis-installed, such that they do not protect to the stated design conditions. A system rated for say -10 F and 20 mph may be suitable for -10 F/0 mph, but survival is questionable at -10 F/10 mph, and there’s usually no chance of staying online at -10 F/20 mph. Such trips should under EOP-012-3 require that the GO install improved protection (if the trip occurred when above the ECWT), but they should not constitute a NERC violation on the grounds that the GO failed to, “provide the capability.” 3. The Known Generator Cold Weather Constraints in Att. 1 are introduced by saying that they are circumstances, but some are activities rather than nouns. “Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters,” for example should be, “Systems that apply heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters.” That is, such systems provide a finite degree of protection, and the point at which they can be overwhelmed by unusually severe winter storms is unknown. Trips therefore do not require replacement by larger equipment (which would still be subject to the same uncertainties), nor do GOs incur a GCWRE if reducing load in a snowstorm as a proactive operational measure to maximize their safety margin.	
Likes 0	
Dislikes 0	

Response	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	
Document Name	
Comment	

R1 appears to require entities to find data to address missing data points. The approach should align more with the following NAGF suggestion:

“Using publicly available government data sources (such as NOAA or ASOS), the ECWT calculation is complete if the data source has greater than 90 percent of the expected data points and any gap greater than 168 hours is addressed.”

Entities are capable of policing themselves. The reporting process with the CEA will be an additional burden potentially requiring multiple iterations of revisions. This may impact the actual goal of restoring equipment in a timely manner.

Implementation Plan, R3 was revised to include existing units, but expanded description appears to only apply to entities beginning commercial operation after the effective date of EOP-012-3.

Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	

Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC	
Answer	
Document Name	
Comment	

WECC recognizes there is a lot of compliance concern being expressed with regards to ECWT determination. The DT has done a great job trying to alleviate the concern listen to the points of view, and provide clarity where it could. Implementation Guidance should be considered.

WECC believes the Technical Rationale could be updated to include thoughts on “existing” versus “new” freeze protection measures. The language should reflect the high level thoughts on what those terms mean to avoid entities replacing failed heat trace with ”new” heat trace that may simply be a different brand, ampacity, or length. Additionally, changes in the Technical Rationale to provide guidance on units that are similar in nature and exposed to similar climates may help understanding of expectations (within R6/R7 and Attachment 1).

Likes 0	
Dislikes 0	

Response	
Martin Sidor - NRG - NRG Energy, Inc. - 6	

Answer	
Document Name	
Comment	

NRG would appreciate the SDT to update the NERC guidance on calculating the ECWT to address the new verbiage in R1.1 where adjustments for missing or invalid hourly temperature data is addressed. The method suggested by NAGF in achieving 90% of expected data points should be sufficient.

Requirement R4.1 was adjusted to include ECWT identification by unit- this generally doesn't change at each site footprint.

Regarding the CW CAP Extension Request and Constraint process, the timelines for submittal are 60 days ahead of an expiration. If NERC/RE/CEA takes the full 15 days to acknowledge receipt and 45 days to review, but rejects the request, there is not time for an entity to correct a deficiency. This should be a shorter review period or require a longer time period for follow up. If the Process document is to be utilized as enforcement policy there is no recourse for Registered Entities to avoid non-compliance associated with timelines of CAP Extensions or Constraint Rejections.

Likes 0	
Dislikes 0	
Response	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	
Document Name	
Comment	

NRG would like to express its appreciation of the drafting team's work to incorporate FERC Order language in consultation with industry participants.

NRG would appreciate the SDT to update the NERC guidance on calculating the ECWT to address the new verbiage in R1.1 where adjustments for missing or invalid hourly temperature data is addressed. The method suggested by NAGF in achieving 90% of expected data points should be sufficient.

Requirement R4.1 was adjusted to include ECWT identification by unit- this generally doesn't change at each site footprint.

Regarding the CW CAP Extension Request and Constraint process, the timelines for submittal are 60 days ahead of an expiration. If NERC/RE/CEA takes the full 15 days to acknowledge receipt and 45 days to review, but rejects the request, there is not time for an entity to correct a deficiency. This should be a shorter review period or require a longer time period for follow up. If the Process document is to be utilized as enforcement policy there is no recourse for Registered Entities to avoid non-compliance associated with timelines of CAP Extensions or Constraint Rejections.

Likes 0	

Dislikes 0	

Response

Marty Hostler - Northern California Power Agency - 4	
Answer	
Document Name	

Comment
Further, during webinars it was noted that the CEAs will not be required to disclose details of any entities Corrective Plans or Cold Weather Constraints. This suggest an unwillingness to be transparent. It sets up giving an unfair competitive advantage to some entities over others. For instance, one entity that may have a corrective action plan that includes repairing/replacing structural steel or wind turbine blades, but a CEA may rule them as manufacture limitiations and thus not requiring them to be replaced. On the other hand another entity my be required to spend time and dollars making CEA ruled corrective actions that are too costly for that entity to remain competitive in the market. Without transparency entities don't know if they are being unfairly required to replace or modify equipment.

Likes 0	
Dislikes 0	

Response

Mason Jones - Mason Jones On Behalf of: Michael Whitney, Northern California Power Agency, 4, 6, 3, 5; - Mason Jones	
Answer	
Document Name	

Comment
Further, during webinars it was noted that the CEAs will not be required to disclose details of any entities Corrective Plans or Cold Weather Constraints. This suggest an unwillingness to be transparent. It sets up giving an unfair competitive advantage some entity over others. For instance, one entity that may be required to repair/replace structural steel or wind turbine blades may not be required to replace them but a different entity may need to replace some of their equipment. Without transparency entities don't know if are being unfairly required to replace or modify equipment.

Likes 0	
Dislikes 0	

Response

Michael Whitney - Northern California Power Agency - 3, Group Name NCPA	
Answer	
Document Name	
Comment	
See Marty Hostler comments.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	
Document Name	
Comment	
-FirstEnergy believes language should exist to exempt implementation of protection measures (and thereby exempting a cold weather reliability event) in the case of risk to employee health and safety due to exposure to hazardous conditions beyond control (severe wind chill, poor visibility, flooding, fire, etc). - FirstEnergy believes language should exist exempting a reliability event in the case of extreme cold weather conditions below the established ECWT. - FirstEnergy believes that the term ‘due to circumstances beyond its control’ in sections 6.4 and 7.2 is too subjective to be a condition of compliance and should be removed; this would broaden the qualifying circumstances to include unforeseen events or conditions of any nature, and leave approval or denial of an extension request at the full discretion of the CEA.	
Likes 0	
Dislikes 0	
Response	
Erin Wilson - NB Power Corporation - New Brunswick Power Transmission Corporation - 5	
Answer	
Document Name	
Comment	

Consideration should be given to updating the MOD-032-1 Requirement R1 data requirements to include generator cold weather data operating limitations under EOP-012-3 Requirement R1, with the objective to ensure that Planning Coordinators and Transmission Planners developing benchmark planning cases for performing Extreme Temperature Assessments pursuant to TPL-008-1 R3 have the information necessary to realistically posture their cases for identified benchmark temperature events.

Regarding the ECWT calculation, suggest adding guidance to the Technical Rationale regarding combining data from different weather data resources, so that the frequency sampling is the same. For example, if one weather data source gathers temperature data three times per hour and another weather data source gathers weather data one time per hour, this will skew the 0.2 percentile in favor of the more frequent weather data source. Suggest adding guidance with a threshold such as at least 66% of the hours for each year from each weather data source must have hourly data.

Could add examples to the Technical Rationale and/or the ECWT Calculation document that shows what would be considered a valid approach to handling missing temperature data.

Add clarification in the Technical Rationale regarding the R5 training requirement. For dispersed generation resources with Remote Operation Centers, is it the expectation that these personnel be trained on the Cold Weather Preparedness Plan or is it just on-site operations and maintenance personnel? Also, R5 does not use the NERC defined term of “Agreement” (A contract or arrangement, either written or verbal and sometimes enforceable by law) being needed between the GO and GOP regarding who is responsible for the training. Suggest clarifying in the Technical Rationale that this is not the expectation, but rather it can be an informal agreement between the GO and GOP.

Likes 0	
Dislikes 0	

Response

Jeffrey Streifling - NB Power Corporation - 1

Answer	
Document Name	

Comment

Consideration should be given to updating the MOD-032-1 Requirement R1 data requirements to include generator cold weather data operating limitations under EOP-012-3 Requirement R1, with the objective to ensure that Planning Coordinators and Transmission Planners developing benchmark planning cases for performing Extreme Temperature Assessments pursuant to TPL-008-1 R3 have the information necessary to realistically posture their cases for identified benchmark temperature events.

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Likes 0	
Dislikes 0	

Response

Carver Powers - Utility Services, Inc. - 4

Answer	
Document Name	

Comment

1. Regarding the ECWT calculation, suggest adding guidance to the Technical Rationale regarding combining data from different weather data resources, so that the frequency sampling is the same. For example, if one weather data source gathers temperature data three times per hour and another weather data source gathers weather data one time per hour, this will skew the 0.2 percentile in favor of the more frequent weather data source. Suggest adding guidance with a threshold such as at least 66% of the hours for each year from each weather data source must have hourly data.

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Likes 0	
Dislikes 0	

Response

Thomas Foltz - AEP - 5

Answer	
Document Name	

Comment

The most recent revision of R2 removes the phrase “in place”, and as a result, there is no longer a requirement to have CAP in place upon beginning commercial operation. AEP requests that text be added to make it clear exactly when the CAP needs to be in place.

R6’s “Each Generator Owner shall, when experiencing a Generator Cold Weather… Reliability Event at a generating unit” is problematic. The text “when experiencing” infers (likely quite unintentionally) that the Corrective Action Plan will be developed and implemented *during* when the event is occurring.

The latest draft of R6 removes the text “The Corrective Action Plan shall be developed before the first day of July, but not more than 150 days after the Generator Cold Weather Reliability Event.” This is problematic, as it is no longer clear when the CAP must be in place. In the current draft, it is only clear when the CAP is to be completed. AEP recommends re-inserting the text that was removed.

Section E “Associated Documents” specifies the “Calculating Extreme Cold Weather Temperature” document, but does not include a hyperlink to it. We suggest that a hyperlink be added for this document, perhaps as a footnote or similar.

Likes 0	
Dislikes 0	

Response

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro

Answer	
Document Name	

Comment

The Generator Cold Weather CAP Extension and Constraint Process sets timeline expectations for CAP extensions, including for CEA. There could be situations where if the CEA exceeds the 45-day expectation to approve an extension, the submitting GO would be in potential noncompliance to EOP-012-3 if the extension rejection is received after the initial CAP implementation deadline.

BC Hydro recommends that a provision to allow flexibility for compliance enforcement should there be a case where the CAP timetables are exceeded while an extension request is being processed by the CEA.

Likes 0	
Dislikes 0	

Response

Donna Wood - Tri-State G and T Association, Inc. - 1

Answer	
Document Name	

Comment

Tri-State Supports the MRO NSRF Comments

Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	
Document Name	
Comment	
Black Hills Corporation agrees with the NAGF's additional proposed EOP-012-3 comments.	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	
Document Name	
Comment	
WEC Energy Group supports the comments of the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	
Document Name	
Comment	
Thank you for the opportunity to comment.	
Likes 0	
Dislikes 0	

Response

Richard Vendetti - NextEra Energy - 5	
Answer	
Document Name	

Comment

NextEra would like to address concerns contained in the proposed modifications to EOP-012-3 and the Generator Cold Weather CAP Extension and Constraint Process:

CAP Extension Request and Cold Weather Constraint Review Process

NextEra does not dispute the time frame in which to submit a CAP extension, however, is concerned with the vague language contained in the CAP Extension Request Review Process and the Constraint Review Process. NextEra cannot determine what type of documentation is required to satisfy both submittals to the CEA. This document should include various examples for generation sites, including wind and solar.

NextEra does not agree that Align is the best system to utilize for compliance obligations with EOP-012-3. Is NERC proposing a separate module for these submittals? As currently configured, submittal in Align will be unduly burdensome and will co-mingle self-report and mitigation plans regarding potential non-compliance items with operational reporting. Further, NextEra is concerned the Align system may not be able to handle such voluminous data as NextEra will likely have to submit for CAP and cold weather constraints. NextEra currently operates approximately 320 generation sites, with that number increasing in 2025. NextEra is concerned that not only would this be burdensome to the entities, but also to CEA staff as well in processing and addressing CAP submittals, extensions and cold weather constraints and cause undue delays.

NextEra does not dispute the need for a review or “appeal” process following the denial of a CAP extension request and Cold Weather Constraint, however this process should be further defined within the document by the Standard Drafting Team. NextEra does not recognize the benefit of a joint review of a denial by NERC and the CEA without the opportunity for sufficient due process, including (i) a clearly defined process, (ii) opportunity to submit additional documentation, as needed, and (iii) review by an independent source such a designated cold weather panel or advisory committee.

There is no further explanation of the steps following the denial of a CAP extension request or cold weather constraint. Will entities be out of compliance with EOP-012-3 if a cold weather constraint is denied and the entity has not submitted a CAP? If so, will the entity have time in order to submit a CAP without being non-compliant? This process should be fully explained within the document.

NextEra would like to see industry visibility on the approval and denial of Cold Weather Constraints. NERC should be transparent in the release of this information, as all of the industry faces similar challenges in dealing with extreme cold weather and would benefit in understanding what type of constraints are being approved and denied by the CEA. This could be accomplished in a manner such as quarterly reports and CEA subcommittee meetings. The submitting entity need not be recognized within the reports, however the type of constraint with reasons for approval or denial should be stated.

Likes 0	
Dislikes 0	

Response

Darcy O'Connell - California ISO - 2	
Answer	
Document Name	

Comment
CAISO agrees with comments submitted by the ISO/RTO Counsel (IRC) Standards Review Committee

Likes 0	
Dislikes 0	

Response

Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	
Document Name	

Comment
N/A

Likes 0	
Dislikes 0	

Response

Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	
Answer	
Document Name	

Comment
MEC supports NAGF comments. MEC would cast an affirmative ballot if NAGF comments for Q1, and EEI comments for Questions 2 and 3 are adopted by the SDT.

Likes 0	
Dislikes 0	

Response

Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	
Document Name	

Comment

Due to the realized ambiguity of the requirement for ECWT calculation and the flexibility afforded this standard drafting team by their SAR, the MRO NSRF makes the following suggestion to improve the clarity and auditability of the ECWT calculation, possibly via footnote in R1.1.

If using publicly available government data sources (such as NOAA or ASOS), the ECWT calculation will be considered complete if the data source (or sources) has greater than 90 percent of the necessary data points and any gap greater than 168 continuous hours is addressed.

MRO NSRF also suggests the following changes to the GCWRE definition to ensure that the language matches the intent. There are concerns that the language would for (2) and (3) would look at individual generating units of an I4 generator and not the plant/facility in aggregate as intended.

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit or **IBR fails** to synchronize within a specified start-up time; or

(3) a Forced Outage **of the unit or IBR**.

MRO NSRF does believe that these two issues is important and must be addressed, preferably by this drafting team as it would be within the scope of the SAR which it is operating under, however MRO NSRF also recognizes the constraints under which this Standard Drafting Team is operating and does not view correcting these issues as a something must be addressed by this Standard Drafting Team at this time.

Overall, MRO NSRF appreciates the improvement that has been made between the first and second drafts of this standard. Even if this improvement doesn't translate to a significantly higher balloting result, the MRO NSRF does feel that this standard is much closer to passing than it was previously. Although MRO NSRF still has concerns about this standard as currently written, if the concerns are addressed, this would move the standard into an acceptable state for many members.

Likes 0	
Dislikes 0	

Response

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5

Answer	
Document Name	

Comment

Due to the realized ambiguity of the requirement for ECWT calculation and the flexibility afforded this standard drafting team by their SAR, NV Energy makes the following suggestion to improve the clarity and auditability of the ECWT calculation, possibly via footnote in R1.1.

If using publicly available government data sources (such as NOAA or ASOS), the ECWT calculation will be considered complete if the data source (or sources) has greater than 90 percent of the necessary data points and any gap greater than 168 continuous hours is addressed.

NV Energy also suggests the following changes to the GCWRE definition to ensure that the language matches the intent. There are concerns that the language would for (2) and (3) would look at individual generating units of an I4 generator and not the plant/facility in aggregate as intended.

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit or IBR fails to synchronize within a specified start-up time; or

(3) a Forced Outage of the unit or IBR.

NV Energy does believe that these two issues is important and must be addressed, preferably by this drafting team as it would be within the scope of the SAR which it is operating under, however NV Energy also recognizes the constraints under which this Standard Drafting Team is operating and does not view correcting these issues as a something must be addressed by this Standard Drafting Team at this time.

Overall, NV Energy appreciates the improvement that has been made between the first and second drafts of this standard. Even if this improvement doesn't translate to a significantly higher balloting result, NV Energy does feel that this standard is much closer to passing than it was previously. Although NV Energy still has concerns about this standard as currently written, if the concerns are addressed, this would move the standard into an acceptable state for many members.

Likes 0	
Dislikes 0	

Response

Ruchi Shah - AES - AES Corporation - 5

Answer	
Document Name	

Comment

AES US Renewables still has concerns about the process described in the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process. Although the timelines listed in the document (eg: no less than 60 calendar days) are considered un-enforceable, we are concerned that this document leaves a lot of room for interpretation by each Regional Entity's team that will be utilizing this document to review and approve CAP Extensions and Constraint Declarations. We do appreciate that there is language added in the latest version concerning the ability to request a joint NERC and CEA review of a denial (applies to both CAP extension and constraint declaration). However, this still does not resolve the issue that if a denial is given, what are the next steps Generator Owners are required to take - for example, does Generator Owner cease operation of the generation facility to avoid going into non-compliance because the Generator Owner could not get extension of CAP or constraint declaration approved?

We are also concerned about R8 Part 8.1 where there are only 15 calendar days allowed to submit a constraint declaration for new generators after commercial operation that could not meet R2. Again, based on the concerns mentioned above regarding the constraint approval process, this does not leave a lot of room for Generator Owners to work on next steps should the constraint be denied. Additionally, if the constraint is denied under R2.2, does that mean the Generator Owner is already under non-compliance?

We request that the drafting team take these scenarios into account to provide further clarifications or include additional language to make the process clearer, including guidance on next steps when a constraint declaration is denied under R2.2 and whether the GO can continue to operate the facility as is.	
Likes 0	
Dislikes 0	
Response	
Nikki Carson-Marquis - Nikki Carson-Marquis On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Nikki Carson-Marquis	
Answer	
Document Name	
Comment	
Minnkota Power Cooperative appreciates the diligent efforts of the Standard Drafting Team to incorporate industry feedback while ensuring compliance with the FERC Directives. For EOP-012-2: requirement R1.1 and Measure M1, Minnkota recommends replacing “adjustments” with “methodology” to improve clarity and auditability. A methodology should be utilized for missing and invalid temperature data such that the entire dataset is processed in a consistent manner. In addition, Minnkota would like to echo the MRO NSRF’s concerns regarding the realized ambiguity of the Extreme Cold Weather Temperature (ECWT) calculation requirement. It is unrealistic to expect a multi-decade, hourly observation dataset to be 100% complete for all NOAA weather stations. Missing observations in a dataset may be due to a number of reasons including, but not limited to, malfunctioning instrumentation, observations not logged/saved/recorded in the official climate record, communications issues, or observations being flagged in the National Weather Service’s QAQC process, just to name a few. Thus, reasonable expectations are important to minimize auditing disparities between regions in the ERO Enterprise when entities are performing their required ECWT calculation(s). Minnkota understands the Standard Drafting Team is working to meet strict goals that do not allow for sufficient time to adequately address this issue.	
Likes 0	
Dislikes 0	
Response	
Mary Smith - Southern Indiana Gas and Electric Co. - 1,3,5,6 - RF	
Answer	
Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	

Response

Chantal Mazza - Chantal Mazza On Behalf of: Junji Yamaguchi, Hydro-Quebec (HQ), 1, 5; Nicolas Turcotte, Hydro-Quebec (HQ), 1, 5; - Chantal Mazza

Answer	
Document Name	

Comment
We support NBPower's comment: Consideration should be given to updating the MOD-032-1 Requirement R1 data requirements to include generator cold weather data operating limitations under EOP-012-3 Requirement R1, with the objective to ensure that Planning Coordinators and Transmission Planners developing benchmark planning cases for performing Extreme Temperature Assessments pursuant to TPL-008-1 R3 have the information necessary to realistically posture their cases for identified benchmark temperature events.

Likes 0	
Dislikes 0	

Response

Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples

Answer	
Document Name	

Comment
Evergy supports and incorporates by reference the comments of the Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) and the North American Generator Forum (NAGF) on question 5

Likes 0	
Dislikes 0	

Response

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC

Answer	
Document Name	

Comment
Regarding the Extreme Cold Weather Temperature (ECWT) calculation, suggest adding guidance to the Technical Rationale regarding combining data from different weather data resources, so that the frequency sampling is the same. For example, if one weather data source gathers temperature data

three times per hour and another weather data source gathers weather data one time per hour, this will skew the 0.2 percentile in favor of the more frequent weather data source. Suggest adding guidance with a threshold such as at least 66% of the hours for each year from each weather data source must have hourly data.

Recommend adding examples to the Technical Rationale and/or the ECWT Calculation document that shows what would be considered a valid approach to handling missing temperature data.

Recommend adding clarification in the Technical Rationale regarding the R5 training requirement. For dispersed generation resources with Remote Operation Centers, is it the expectation that these personnel be trained on the Cold Weather Preparedness Plan or is it just on-site operations and maintenance personnel? Also, R5 does not use the NERC defined term of “Agreement” (A contract or arrangement, either written or verbal and sometimes enforceable by law) being needed between the GO and GOP regarding who is responsible for the training. Suggest clarifying in the Technical Rationale that this is not the expectation, but rather it can be an informal agreement between the GO and GOP.

Likes 0	
Dislikes 0	

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer	
Document Name	

Comment

The NAGF provides the following comments related to the proposed EOP-012-3 Draft #2:

Concerns with Requirement R1 – The modifications appear to require entities to find data to address missing data points. If the data points are randomly missing, this effort is completely unnecessary and burdensome and does not increase reliability. This position is supported by the statistical process being used. Similar to the process used under BAL-003 (which uses the median to determine compliance) the use of the percentile is very unlikely to be materially impacted due to randomly missing data points. The language in EOP-012-2 and draft EOP-012-3 R1 is somewhat misleading as the process to determine a percentile does not involve calculation of the data point. It only requires an entity to determine which data point is the one to be used for the stated purpose. The NAGF is not asking that the SDT correct this language at this time in the interest of expediently completing the effort. The NAGF is pointing it out only to help the SDT understand the true nature of the process used to determine the ECWT for any given location.

As currently structured, each NERC Region is implementing different means of determining when an ECWT determination is sufficient, and this makes the standard unenforceable due to the ambiguous nature of the process. For this reason, the NAGF asks that the SDT address this flaw in the standard. ***This issue, which was identified through the implementation of EOP-012-2, is an important issue for the NAGF membership. The NAGF notes that this issue was raised starting with the draft SAR for EOP-012-3 and continues to be a concern for the NAGF.***

As requested by the SDT, the NAGF is providing proposed language to address the concern. The NAGF does not believe this to be the only way to address the issue, but is providing this recommendation as one means to address the issue.

Requirement R1 - The NAGF recommends adding the following footnote to R1, 1.1:

"Using publicly available data sources (such as NOAA or ASOS), the ECWT calculation is complete if the data source has greater than 90 percent of the expected data points and any gap greater than 168 hours is addressed."

This footnote provides clarity and will ensure consistent enforcement related to the reasonable determination of the ECWT for all entities.

Requirement R8 – Recommend re-wording to read "If the CEA determines the declared Generator Cold Weather Constraint is not valid,"

Requirement R5 - This requirement continues to be written such that the process for compliance is not clear when a plant is operated by an entity other than the Generator Owner. The NAGF notes that the RSAW requests an agreement between the GO and GOP that is not part of the requirement. It is recommended that the SDT remedy this issue that has been identified since EOP-012 -1 was developed. The NAGF feels obligated to mention it since this is a flaw in the standard that should be addressed in order to improve the standard so that it meets the goals stated in NERC's Ten Benchmarks of an Excellent Standard, specifically items 6 (Completeness), 8 (Clear Language) and 9 (Practicality).

Generator Cold Weather Reliability Event Definition

While working to implement EOP-012-2 and EOP-012-3 Cold Weather Reliability Events materials, NAGF membership has identified a significant issue that needs to be corrected for EOP-012-3 in the NERC Cold Weather Reliability Event definition for bullets 2 and 3. In short, the 10% of total capacity and not less than 20 MW language should be added to bullet 3 at a minimum and potentially to bullet 2 if NERC intended "failure to start" to apply to IBR "plants" and not individual turbines/inverters.

Alternately, EOP-012-3 could add individual unit exclusion language similar that found in PRC-004.

Generator Cold Weather Reliability Event Definition:

For bullet 2: *It appears that bullet 2 only applies to synchronous units and not IBRs. The NAGF requests language be added to clarify this issue.*

For bullet 3: *The NAGF notes that the current NERC Glossary of Terms - Forced Outage language is too vague and could have unintended consequences.*

To address this concern, the modifications below are provided for consideration:

• (2) a start-up failure where the unit fails to ***synchronize*** *more than 10% of the total capacity of the unit but not less than 20 MWs*

• (3) a Forced Outage of more than 10% of the total capacity of the unit but not less than 20 MWs.

As an example, if a renewable plant has a bus outage that results in the complete loss of power to all auxiliary heating equipment and the renewable Facility (one unit out of 200 or the entire plant?) either fails to start at or above the ECWT, this could trigger the Generator Cold Weather Reliability Event per the existing bullets 2 and / or 3. Note the plant bus is the only power source nearby that can supply auxiliary heating power. Note the current NERC Glossary of Terms definition for NERC Forced Outage could also bring in the bus failure due to item 2 even though there wasn't a plant / unit trip.

Provided for Reference:

Generator Cold Weather Reliability Event: *One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:*

(1) a forced derate of more than 10% of the total capacity of the unit but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize (does this or does this not apply to IBRs?) within a specified start-up time; or

(3) a Forced Outage.

NERC Glossary of Terms Forced Outage:

1. The removal from service availability of a generating unit, transmission line, or other facility for emergency reasons.

2. The condition in which the equipment is unavailable due to unanticipated failure.

Concerns with the ERO Process Document:

The NAGF appreciates that the SDT is not drafting nor in charge of modifications to the process document posted with the proposed standard. However, since there is not a stated means for industry to provide input to the document otherwise, the NAGF has identified there are still concerns with the process document. The primary and overarching concerns are:

1. While the document now has a footnote that states the ERO is aware that some issues may arise within the 60 days prior to the deadline for a CAP, the document still states it is a requirement to submit a CAP extension 60 days prior to the deadline. These two statements contradict each other. There is either a hard deadline or there is a desire to receive the request and associated documentation by that deadline but no requests will be denied. Please ask NERC and regional staff to clarify which this is and modify the document to clearly state if there is a hard deadline or if the Generator Owner should submit the request when identified.

2. It appears that it is possible that a requested constraint may be denied after the deadlines stated in R6 and R7. This seems unreasonable, assuming that the Generator Owner has determined that there is not, in their estimation, a reasonable means to address the issue that caused the Generator Cold Weather Reliability Event. More details need to be added related to allowing additional time to address the issue without also going through the effort related to a self-report of a Potential Non-Compliance issue. A self-report for something that is already being discussed with the regional entity is unproductive and extremely inefficient for both the registered entity and the regional entities.

The NAGF will provide a copy of the draft document with all our comments through an email to NERC staff if requested.

Likes 0	
Dislikes 0	

Response

Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper

Answer	
Document Name	

Comment

Santee Cooper supports the NAGF comments pertaining to missing/invalid data associated with R1 ECWT calculation. Clarity should be provided regarding criteria for when missing/invalid data must be addressed.

Likes 0	
Dislikes 0	

Response

Romel Aquino - Edison International - Southern California Edison Company - 3

Answer	

Document Name	EEI Near Final Draft Comments _ Project 2024-03 _ Draft 2 _ Rev 0f _ 12_13_2024.docx
Comment	
See comments submitted by the Edison Electric Institute	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	
Document Name	
Comment	
Southern Company endorses MRO's NERC Standards Review Forum (NSRF) comments and suggestions in response to this question. Southern Company is also appreciative and supportive of the SDT completing the process but looks forward to the opportunity to improve the Standard further with the remaining commenting periods.	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	
Document Name	
Comment	
Thank you for the opportunity to comment.	
Likes 0	
Dislikes 0	
Response	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	
Document Name	

Comment
Ameren supports NAGF's comments.

Likes 0	
Dislikes 0	

Response

Kimberly Turco - Constellation - 6	
Answer	
Document Name	

Comment
Constellation has no additional comments

Likes 0	
Dislikes 0	

Response

Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	
Document Name	

Comment
The SRC has concerns and recommendations regarding some of the revised Requirements and regarding the Technical Rationale, as follows. **Requirement R1**. **Request:** Remove the language from Part 1.1 that addresses missing or invalid temperature data. **Justification:** The SRC believes that the language added to Part 1.1 of Requirement R1 regarding missing or invalid temperature data is outside the scope of what is needed to address FERC's directives from the June 2024 Order and is a much broader topic that should be addressed with a dedicated project or working group as entities gain real-world experience calculating Extreme Cold Weather Temperatures and implementing EOP-012. Consequently, the SRC recommends that the drafting team remove this language from the standard and that NERC establish a working group to analyze and develop guidance material on the topic of accounting for missing and invalid temperature data in Extreme Cold Weather Temperature

calculations. This approach will allow the development of best practices for addressing missing and invalid data without rewarding poor data collection and retention practices or providing an avenue for entities to cherry-pick temperature data to artificially elevate an Extreme Cold Weather Temperature.

Requirement R7, Part 7.2.2.

Request: Revise Part 7.2.2 to read as follows: “Revisions to the selected actions in Part 7.1, if any, and any operational measures that will be in place while the Corrective Action Plan is being implemented.”

Justification: The SRC notes that Part 7.2.2 of Requirement R7 uses the lowercase term “operating procedures” as distinguished from the term “Operating Procedures” defined in the NERC Glossary of Terms. To further clarify that the Glossary definition of “Operating Procedures” does not apply in Part 7.2.2, the SRC recommends that the term “operational measures” be used instead of “operating procedures.”

To further clarify Part 7.2.2, the SRC recommends that it be revised to read as follows: “Revisions to the selected actions in Part 7.1, if any, and any operational measures that will be in place while the Corrective Action Plan is being implemented.”

Requirement R8, Part 8.1.

Request: Revise Part 8.1 of Requirement R8 to require new generating units to submit constraint declarations to the CEA within 5 calendar days after commercial operation (instead of the 15 calendar days proposed in the current draft of EOP-012-3).

Justification: While the SRC recognizes that a new Generator Owner may not be able to complete the NERC registration process before its unit reaches commercial operations, new units should generally be designed and constructed to perform at the Extreme Cold Weather Temperature, and new units generally undergo an operational testing period that provides an opportunity to identify performance limitations before beginning commercial operations. As a result, any constraints for new units should be submitted for evaluation as quickly as possible to minimize the amount of time that elapses between the commercial operation date and the Compliance Enforcement Authority determination regarding the validity of the constraint. To minimize this gap, the SRC recommends that Part 8.1 of Requirement R8 be revised to require new generating units to submit constraint declarations to the CEA within 5 calendar days after commercial operation (instead of the 15 calendar days proposed in the current draft of EOP-012-3).

Technical Rationale.

The SRC recommends that the Technical Rationale be revised to include a flowchart detailing the process that applies when a Generator Cold Weather Reliability Event occurs, similar to the broader process flowchart currently included at the end of the Technical Rationale.

Likes 0	
Dislikes 0	

Response

Colin Chilcoat - Invenergy LLC - 6

Answer	
Document Name	
Comment	

Invenergy is comfortable with the requirements around the calculation of the Extreme Cold Weather Temperature, but it is concerned about the growing administrative burden implied by the revisions in Draft 2 of EOP-012-3 and in the associated Technical Rationale. It is unreasonable to expect Generator Owners to determine whether missing hourly data sourced from NOAA or ASOS would have been included in the list of the lowest 100 hourly temperature values in the dataset. We recommend that the drafting team establish a minimum percentage of expected data points above which a Generator Owner can consider their dataset sufficient to determine the ECWT. For example, the drafting team could select a confidence level consistent with NERC's Sampling Methodology Guidelines and Criteria.

Likes 0	
Dislikes 0	
Response	

Rhonda Jones - Invenergy LLC - 5

Answer	
Document Name	
Comment	

Invenergy is comfortable with the requirements around the calculation of the Extreme Cold Weather Temperature, but it is concerned about the growing administrative burden implied by the revisions in Draft 2 of EOP-012-3 and in the associated Technical Rationale. It is unreasonable to expect Generator Owners to determine whether missing hourly data sourced from NOAA or ASOS would have been included in the list of the lowest 100 hourly temperature values in the dataset. We recommend that the drafting team establish a minimum percentage of expected data points above which a Generator Owner can consider their dataset sufficient to determine the ECWT. For example, the drafting team could select a confidence level consistent with NERC's Sampling Methodology Guidelines and Criteria.

Likes 0	
Dislikes 0	
Response	

Constantin Chitescu - Ontario Power Generation Inc. - 5

Answer	
Document Name	
Comment	

OPG support NBPower's comment:

Consideration should be given to updating the MOD-032-1 Requirement R1 data requirements to include generator cold weather data operating limitations under EOP-012-3 Requirement R1, with the objective to ensure that Planning Coordinators and Transmission Planners developing benchmark planning cases for performing Extreme Temperature Assessments pursuant to TPL-008-1 R3 have the information necessary to realistically posture their cases for identified benchmark temperature events.	
Likes 0	
Dislikes 0	
Response	

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Comments

Project Name:	2024-03 Revisions to EOP-012-2 | Draft 2
Comment Period Start Date:	12/3/2024
Comment Period End Date:	12/20/2024
Associated Ballot(s):	2024-03 Revisions to EOP-012-2 | Draft 1 EOP-012-3 AB 2 ST 2024-03 Revisions to EOP-012-2 | Draft 1 Implementation Plan AB 2 OT

There were 66 sets of responses, including comments from approximately 171 different people from approximately 109 companies representing 10 of the Industry Segments as shown in the table on the following pages.

All comments submitted can be reviewed in their original format on the project page.

If you feel that your comment has been overlooked, let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, contact Director, Standards Development Jamie Calderon (via email) or at (404) 446-9647.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Questions

1. In paragraph 47 of the June 2024 Order, FERC directed NERC to revise EOP-012-2 to "ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them." FERC provided several examples of how NERC may meet directives in this paragraph and explained that NERC may address these concerns in an equally efficient and effective manner, provided NERC explains how it addresses FERC's concerns. The drafting team and industry recognize that every situation that creates a Generator Cold Weather Constraint cannot be listed within Attachment 1 and is the reason for Case-by-Case language provided.

Do you agree with the industry driven edits to Attachment 1? Please provide any additional comments to consider. If you do not agree, please provide your language change suggestions for the drafting team.

2. In paragraph 68 of the June 2024 Order, FERC directed NERC to modify Requirement R7 of EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. FERC provided an example for how to address this directive, such as to require shorter timeframes for those units that have experienced issues and allow longer timeframes to address similar potential issues across a fleet for those units that have not experienced issues.

The drafting team modified Requirement R6 based on industry feedback, while still maintaining the FERC directive. Do you agree that the modifications in Requirement R6 are responsive to the FERC Directives? If you do not agree, please provide your language change suggestions for the drafting team.

3. In paragraph 72 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to clarify that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

The drafting team provided updated language in Requirement R2 to address the issue of units in different stages of design and construction to support meeting this directive. June 29, 2023 was chosen as a date of demarcation, as that was the date the Extreme Cold Weather Temperature was settled upon, after the approval date of February 16, 2023. Do you agree that the industry driven edits to Requirement R2 are responsive to the FERC directives? If you do not agree, please provide your language change suggestions for the drafting team.

4. In paragraph 94 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R8, Part 8.1 of Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations (than every five years) to verify that the declaration remains valid.

Based on industry feedback, the drafting team created Requirement 9 to require review every 36 calendar months. Do you agree that the revision addresses this directive and provides an effective balance with administrative efforts to ensure Generator Cold Weather Constraints remain valid? If you do not agree, please provide your language change suggestions for the drafting team.

5. Please provide any additional comments for the standard drafting team to consider, if desired.

The Industry Segments are:

1 — Transmission Owners
2 — RTOs, ISOs
3 — Load-serving Entities
4 — Transmission-dependent Utilities
5 — Electric Generators
6 — Electricity Brokers, Aggregators, and Marketers
7 — Large Electricity End Users
8 — Small Electricity End Users
9 — Federal, State, Provincial Regulatory or other Government Entities
10 — Regional Reliability Organizations, Regional Entities

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
BC Hydro and Power Authority	Adrian Andreoiu	1	WECC	BC Hydro	Hootan Jarollahi	BC Hydro and Power Authority	3	WECC
					Helen Hamilton Harding	BC Hydro and Power Authority	5	WECC
					Adrian Andreoiu	BC Hydro and Power Authority	1	WECC
MRO	Anna Martinson	1,2,3,4,5,6	MRO	MRO Group	Shonda McCain	Omaha Public Power District (OPPD)	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					Jamison Cawley	Nebraska Public Power District	1,3,5	MRO
					Jay Sethi	Manitoba Hydro (MH)	1,3,5,6	MRO
					Husam Al-Hadidi	Manitoba Hydro (System Performance)	1,3,5,6	MRO
					Kimberly Bentley	Western Area Power Administration	1,6	MRO
					Jaimin Patal	Saskatchewan Power	1	MRO

	Corporation (SPC)		
George Brown	Pattern Operators LP	5	MRO
Larry Heckert	Alliant Energy (ALTE)	4	MRO
Terry Harbour	MidAmerican Energy Company (MEC)	1,3	MRO
Dane Rogers	Oklahoma Gas and Electric (OG&E)	1,3,5,6	MRO
Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO
Michael Ayotte	ITC Holdings	1	MRO
Andrew Coffelt	Board of Public Utilities- Kansas (BPU)	1,3,5,6	MRO
Peter Brown	Invenergy	5,6	MRO
Angela Wheat	Southwestern Power Administration	1	MRO
Joshua Phillips	Southwest Power Pool	2	MRO
Patrick Tuttle	Oklahoma Municipal Power Authority	4,5	MRO

Santee Cooper	Carey Salisbury	5		Santee Cooper	Paul Camilletti	Santee Cooper	1,3,5,6	SERC
					Kevin Baker	Santee Cooper	1,3,5,6	SERC
					Dom Ciccollela	Santee Cooper	1,3,5,6	SERC
WEC Energy Group, Inc.	Christine Kane	3		WEC Energy Group	Christine Kane	WEC Energy Group, Inc.	3	RF
					Michelle Hribar	WEC Energy Group, Inc.	5	RF
					David Boeshaar	WEC Energy Group, Inc.	6	RF
					Candace Morakinyo	WEC Energy Group, Inc.	4	RF
Exelon	Daniel Gacek	1		Exelon	Daniel Gacek	Exelon	1	RF
					Kinte Whitehead	Exelon	3	RF
ACES Power Marketing	Jodirah Green	1,3,4,5,6	MRO,NPCC,RF,SERC,Texas RE,WECC	ACES Collaborators	Kevin Lyons	Central Iowa Power Cooperative	1	MRO
					James Shultz	Hoosier Energy Electric Cooperative	1	RF
					Kris Carper	Arizona Electric Power Cooperative, Inc.	1	WECC

					Jordan Mcclellan	Southern Illinois Power Cooperative	1	SERC
Entergy	Julie Hall	6		Entergy	Oliver Burke	Entergy - Entergy Services, Inc.	1	SERC
					Jamie Prater	Entergy	5	SERC
Electric Reliability Council of Texas, Inc.	Kennedy Meier	2		ISO/RTO Council Standards Review Committee (SRC)	Kennedy Meier	Electric Reliability Council of Texas, Inc.	2	Texas RE
					Joshua Phillips	Southwest Power Pool, Inc. (RTO)	2	MRO
					Helen Lainis	Independent Electricity System Operator	2	NPCC
					Kirsten Rowley	Midcontinent ISO, Inc.	2	RF
					Gregory Campoli	New York Independent System Operator	2	NPCC
					Thomas Foster	PJM Interconnection, L.L.C.	2	RF
					Darcy O'Connell	California ISO	2	WECC

					John Pearson	ISO New England, Inc.	2	NPCC
FirstEnergy - FirstEnergy Corporation	Mark Garza	4		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF
					Robert Loy	FirstEnergy - FirstEnergy Solutions	5	RF
					Mark Garza	FirstEnergy- FirstEnergy	1,3,4,5,6	RF
					Stacey Sheehan	FirstEnergy - FirstEnergy Corporation	6	RF
Northern California Power Agency	Michael Whitney	3		NCPA	Scott Tomashefsky	Northern California Power Agency	4	WECC
					Marty Hostler	Northern California Power Agency	5,6	WECC
					Marty Hostler	Northern California Power Agency	5,6	WECC
DTE Energy - Detroit	Mohamad Elhusseini	5		DTE Energy	Mohamad Elhusseini	DTE Energy	5	RF

Edison Company					Patricia Ireland	DTE Energy	4	RF
					Marvin Johnson	DTE Energy - Detroit Edison Company	3	RF
Southern Company - Southern Company Services, Inc.	Pamela Hunter	1,3,5,6	SERC	Southern Company	Matt Carden	Southern Company - Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
					Leslie Burke	Southern Company - Southern Company Generation	5	SERC
Black Hills Corporation	Rachel Schuldt	6		Black Hills Corporation - All Segments	Travis Grablander	Black Hills Corporation	1	WECC
					Josh Combs	Black Hills Corporation	3	WECC

					Rachel Schuldt	Black Hills Corporation	6	WECC
					Carly Miller	Black Hills Corporation	5	WECC
					Sheila Suurmeier	Black Hills Corporation	5	WECC
Northeast Power Coordinating Council	Ruida Shu	1,2,3,4,5,6,7,8,9,10	NPCC	NPCC RSC	Gerry Dunbar	Northeast Power Coordinating Council	10	NPCC
					Deidre Altobell	Con Edison	1	NPCC
					Michele Tondalo	United Illuminating Co.	1	NPCC
					Stephanie Ullah-Mazzuca	Orange and Rockland	1	NPCC
					Michael Ridolfino	Central Hudson Gas & Electric Corp.	1	NPCC
					Randy Buswell	Vermont Electric Power Company	1	NPCC
					James Grant	NYISO	2	NPCC
					Dermot Smyth	Con Ed - Consolidated Edison Co. of New York	1	NPCC

David Burke	Orange and Rockland	3	NPCC
Salvatore Spagnolo	New York Power Authority	1	NPCC
Sean Bodkin	Dominion - Dominion Resources, Inc.	6	NPCC
Silvia Mitchell	NextEra Energy - Florida Power and Light Co.	1	NPCC
Sean Cavote	PSEG	4	NPCC
Jason Chandler	Con Edison	5	NPCC
Shivaz Chopra	New York Power Authority	6	NPCC
Vijay Puran	New York State Department of Public Service	6	NPCC
David Kiguel	Independent	7	NPCC
Joel Charlebois	AESI	7	NPCC
Joshua London	Eversource Energy	1	NPCC
Joel Charlebois	AESI	7	NPCC
John Hastings	National Grid	1	NPCC

					Erin Wilson	NB Power	1	NPCC
					James Grant	NYISO	2	NPCC
					Michael Couchesne	ISO-NE	2	NPCC
					Kurtis Chong	IESO	2	NPCC
					Michele Pagano	Con Edison	4	NPCC
					Bendong Sun	Bruce Power	4	NPCC
					Carvers Powers	Utility Services	5	NPCC
					Wes Yeomans	NYSRC	7	NPCC
					Emma Halilovic	Hydro One	1,3	NPCC
					Philip Nichols	National Grid	1	NPCC
					Emma Halilovic	Hydro One	1,3	NPCC
					Caver Powers	Utility Services	5	NPCC
Dominion - Dominion Resources, Inc.	Sean Bodkin	6		Dominion	Victoria Crider	Dominion Energy	3	NA - Not Applicable
					Sean Bodkin	Dominion Energy	6	NA - Not Applicable
					Steven Belle	Dominion Energy	1	NA - Not Applicable
					Barbara Marion	Dominion Energy	5	NA - Not Applicable

Western Electricity Coordinating Council	Steven Rueckert	10		WECC	Steve Rueckert	WECC	10	WECC
					Curtis Crews	WECC	10	WECC
Tim Kelley	Tim Kelley		WECC	SMUD and BANC	Nicole Looney	Sacramento Municipal Utility District	3	WECC
					Charles Norton	Sacramento Municipal Utility District	6	WECC
					Wei Shao	Sacramento Municipal Utility District	1	WECC
					Foung Mua	Sacramento Municipal Utility District	4	WECC
					Nicole Goi	Sacramento Municipal Utility District	5	WECC
					Kevin Smith	Balancing Authority of Northern California	1	WECC

1. In paragraph 47 of the June 2024 Order, FERC directed NERC to revise EOP-012-2 to "ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them." FERC provided several examples of how NERC may meet directives in this paragraph and explained that NERC may address these concerns in an equally efficient and effective manner, provided NERC explains how it addresses FERC's concerns. The drafting team and industry recognize that every situation that creates a Generator Cold Weather Constraint cannot be listed within Attachment 1 and is the reason for Case-by-Case language provided.

Do you agree with the industry driven edits to Attachment 1? Please provide any additional comments to consider. If you do not agree, please provide your language change suggestions for the drafting team.

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	

1-Item #2 under case-by-case determinations is not clear regarding what is meant by manufacturer's design limitations and how the declaration is applied. Many critical components have minimum operating temperatures based on the manufacturer's design of a device. Does item #2 mean a GO does not have to use freeze protections if the critical component was manufactured to operate above the ECWT? Item #2 needs to be either clarified or removed.

Additionally, Duke Energy feels the pre-approved constraint section of Attachment 1 has two additional issues. The first issue is related to the restricted focus of the constraints listed - the constraints are focused on wind and solar. While valid, other technologies also have similar constraints. For example, exposed coal piles and coal handling equipment are often impacted by winter conditions and there few freeze protection options available. The second issue relates to the nature of some of these constraints. Some of the examples given are items that will never be resolved during the in-service life of the station. Other items listed will never have a viable option due to technical considerations. In these situations, stations are being forced by the standard to periodically review constraint declarations for items that will never be resolved. Duke Energy recommends that these types of constraints be categorized as constraints that are not only pre-approved but also do not require re-evaluation every three years. 2-Due to the broad nature and subjectiveness of Requirements 3c and 5e, these line items should be removed because it lacks specific details found elsewhere in Attachment 1.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Generating units are to be designed and able to operate to their ECWT. Entities need to provide best efforts to identify Generator Cold Weather Critical Components and apply freeze protection measures. Entities should provide freeze protection measures to any component that is needed for reliable operation. Please review the definition of Generator Cold Weather Critical Component and Fixed Fuel Supply Component. The FERC Order required more frequent review than previously proposed on Generator Cold Weather Constraints so that industry can determine if the Generator Cold Weather Constraint is valid or not and act accordingly.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation agrees to the intent of Attachment 1, however recommends that a caveat be added at the beginning of Generator Cold Weather Constraints (both “known” and “case-by-case”) that the list is not all inclusive and can vary by industry, components and	

location. The attachment appears to not allow for any circumstances outside of what is being directed. Recommend a more generic approach to Attachment 1 than what is provided.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see bullet 10 of Attachment 1 "Case-by-Case" listing for Generator Cold Weather Constraints and the Technical Rationale statements ("Attachment 1 contains a non-comprehensive list of known Generator Cold Weather Constraints as well as a list of situations, circumstances, and criteria that may constitute a Generator Cold Weather Constraint.").	
Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
Talen supports the comments of the NAGF on this issue, and adds that the technologies and plant circumstances involved are so varied that the only comprehensible and consistent means of addressing the issue is likely to consist of issuing a detailed pre-approved list for all currently known potential GCWCs, as NERC has already started to do in Att. 1 of EOP-012-3, reducing CEA case-by-case determinations to a rarely used alternative for unforeseen circumstances.	
Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	
Response	
Thank you for your comments. Please see response to NAGF comments. The DT and Standards Committee included the examples of Generator Cold weather Constraints provided through experience and industry.	
Marty Hostler - Northern California Power Agency - 4	
Answer	No
Document Name	

Comment
NERC is not allowed to make a Reliability Standard that gives one entity a competitive advantage over another. We believe these modifications create an unfair completive advantage to some generating entities over others. Some entities are not required to do anything if their generators were originally designed to operate only above 32-degrees. But some entities were only designed to operate above 30-degrees, some only, above 20, some only above 0-degrees, etc. And, they will be required to spend time and dollars developing corrective action plans and complying with this potentially new standard. Additionally, some entities that have facilities that were originally designed to run below 32 will not need to upgrade their system while others may, or may not, be required to redesign their facilities. And/or add additional equipment in order to operate at temperatures for which they were not designed, built, of financed to operate at.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The Standard is written to help ensure reliable operations in extreme cold weather.

Michael Whitney - Northern California Power Agency - 3, Group Name NCPA	
Answer	No
Document Name	

Comment
See Marty Hostler comments.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. Please see response to Marty Hostler comments.	
Mason Jones - Mason Jones On Behalf of: Michael Whitney, Northern California Power Agency, 4, 6, 3, 5; - Mason Jones	
Answer	No
Document Name	
Comment	
NERC is not allowed to make a Reliability Standard that gives one entity a competitive advantage over another. We believe these modifications create an unfair completive advantage to some generating entities over others. Some entities are not required to do anything if their generators were originally designed to operate only above 32-degrees. But some entities were only designed to operate above 30-degrees, some only, above 20, some only above 0-degrees, etc. And, they will be required to spend time and dollars developing corrective action plans and complying with this potentially new standard. Additionally, some entities that have facilities that were originally designed to run below 32 will not need to upgrade their system while others may, or may not, be required to redesign their facilities. And/or add additional equipment in order to operate at temperatures for which they were not designed, built, of financed to operate at.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Standard is written to help ensure reliable operations in extreme cold weather.	
Jeremy Lawson - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
See Marty Hostler comments.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to Marty Hostler comments.	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	
Comment	
Vistra supports comments made by Northern California Power Authority and NRG. With the added comment that even though NERC is working within FERC guidance it should be pressed upon FERC that GOs should be able to determine for themselves the validity of making constraint upgrades. Market forces for cold weather non performance are enough for GOs to make smart, impactful and necessary upgrades.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to those organizations comments. Making smart, impactful, and necessary upgrades should support prevention of further instances of non-performance.	
Becky Burden - Public Utility District No. 1 of Snohomish County - 5	
Answer	No
Document Name	
Comment	
Final paragraph of attachment 1 should be integrated into existing or made a new requirement as it reads like one.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments.	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	No
Document Name	
Comment	
PGAE supports the NAGF position regarding suggested revisions to Attachment 1 Known Constraints timeline.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to NAGF comments.	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation agrees with NAGF & EEI comments. As noted, there are no wind generator OEM developing a generator that can operate at a temperature below -22 degrees F (-30 degrees C). There are contracts that are already signed for sites that pan to be commissioned in 2027 and 2028; due to this per the first bullet under “Known Constraints in Attachment 1” is not reasonable. This was shared at the Technical Conference related to this standard and PRC-029 & as they shared OEMs need 5-7 years normally to bring a new product to market. Additionally, per EEI, the revised definition of Generator Cold Weather Constraints in Attachment 1”. Black Hills Corporation agrees with the EEI’s proposed edits.	
Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph

Dislikes 0	
Response	
Thank you for your comments. Please see responses to NAGF and EEI comments. At the Technical Conference for EOP-012, OEMs also shared a “Texas” special inverter that had been designed, manufactured, and shipped in less than three years because of the need for reliable operations.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group support the comments of the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to MRO NSRF comments.	
Richard Vendetti - NextEra Energy - 5	
Answer	No
Document Name	
Comment	
NextEra supports the comments provided by EEI Below:	

Within Attachment 1 is the revised definition of Generator Cold Weather Constraint, which we do not fully support. To address our concerns, we offer the following edits in boldface (below) for DT consideration, which are intended to limit entity obligations to address those freeze protection measures that have been shown to be effective in areas with similar winter weather conditions. **Generator Cold Weather Constraint** – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. **Viable f**reeze protection measures include practices, methods, or technologies **that have been successfully** implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies. EEI also suggests changes to the 4th bullet that addresses the "accumulation of frozen precipitation on solar panels." While EEI is supportive of this predefined limitation that recognizes the technical problems associated with ice and snow clearing on solar panels, we also believe the proposed language does not align with the other four (4) Generator Cold Weather Constraints. To address this concern, we suggest the following changes in boldface to bullet 4: Implementation of technologies for the **mitigation** of accumulated frozen precipitation on solar panels. Additionally: NextEra is concerned that Attachment 1 is not inclusive of battery technology as a potential cold weather constraint declaration.

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to EEI comments.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No

Document Name	
Comment	
Minnesota Power agrees with NAGF that the rule needs to address OEM limitations for units in service after 2027 that can't operate below the current design temperature or extend the compliance date.	
Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	
Response	
Thank you for your comments. Please see responses to NAGF comments.	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	
Answer	No
Document Name	
Comment	
MEC supports EEI and MRO NSRF comments as improvements to the drafted language, but the OEM issue identified by NAGF is the most significant and needs to be addressed. MEC would cast an affirmative ballot if NAGF comments for Q1, and EEI comments for Questions 2 and 3 are adopted by the SDT.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to those organization's comments.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	

MRO NSRF Recommends the following modifications to the proposed Generator Cold Weather Constraint definition.

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Viable freeze protection measures include practices, methods, or technologies that **have been successfully** implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.

MRO NSRF would also suggest the following change to the 4th bullet of Known Generator Cold Weather Constraints to the following:

- Implementation of technologies for the purpose of mitigating the effects of accumulated frozen precipitation on solar panels.

Likes 0	
Dislikes 0	

Response

Thank you for your constructive comments. The verbiage provided ("viable" and "have been successfully") were not accepted by the DT. Concerns were raised regarding the need to allow innovation and improvements in freeze protection measures to occur while balancing the thought that new technologies are new until proven to work. New technologies are not required to be implemented as a result of a single GO testing the technology.

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5

Answer	No
Document Name	

Comment

NV Energy Recommends the following modifications to the proposed Generator Cold Weather Constraint definition.

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Viable freeze protection measures include practices, methods, or

technologies that have been successfully implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies. NV Energy would also suggest the following change to the 4th bullet of Known Generator Cold Weather Constraints to the following: • Implementation of technologies for the purpose of mitigating the effects of accumulated frozen precipitation on solar panels.	
Likes 0	
Dislikes 0	
Response	
Thank you for your constructive comments. The verbiage provided ("viable" and "have been successfully") were not accepted by the DT. Concerns were raised regarding the need to allow innovation and improvements in freeze protection measures to occur while balancing the thought that new technologies are new until proven to work. New technologies are not required to be implemented as a result of a single GO testing the technology.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
While AES US Renewables agree with the changes made to the Generator Cold Weather Constraint definition, we suggest adding the following words in the definition to make it clearer: *Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components.* ***Viable f****reeze protection measures include practices, methods, or*	

*technologies **that have been successfully** implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.*

We also have concerns about the changes made in Attachment 1, particularly with the first bullet under "Known Generator Cold Weather Constraints" (see below for reference). Currently, as written, it implies that wind turbine OEMs will have new wind turbine designs that will not have structural limitations after 10/1/2027 (this is assuming ability to operate below -30C which is the current limitation faced by all wind turbine OEMs that we work with). It also implies that Generator Owners/developers will be able to source new wind turbines capable of meeting ECWT below -30C for wind projects that are being developed currently with commercial operation date of 10/1/2027 and beyond. This criterion is not realistic as we are not aware of any wind turbine OEMs that are currently actively working on a new design capable in operating below the current design limitation of -30C. We request that the drafting team revert to the language that was proposed in Draft 1 without further changes.

Individual wind turbine towers manufactured prior to October 1, 2027 that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1 for generating units that began commercial operation prior to October 1, 2027.

We do want to mention our support for the changes made to the second bullet under "Known Generator Cold Weather Constraints" concerning effectiveness of de-icing technologies for wind turbine blades.

Likes 0	
Dislikes 0	

Response

Thank you for your constructive comments. The verbiage provided ("viable" and "have been successfully") were not accepted by the DT. Concerns were raised regarding the need to allow innovation and improvements in freeze protection measures to occur while balancing the thought that new technologies are new until proven to work. New technologies are not required to be implemented as a result of a single GO testing the technology. The DT and Standards Committee reviewed the Generator Cold Weather Constraints and provided some updates. Technology changes when demands to improve the technology are present. GOs should be providing design requirements to OEMs that reflect the capability to operate at the ECWT.

Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples

Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI), Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF), and the North American Generator Forum (NAGF) on question 1	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to those organization's comments.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	

While Avista supports in part the approach that the Drafting Team has taken to address FERC Commission Directives contained in the June 27, 2024 FERC Order, Approving Extreme Cold Weather Reliability Standard EOP-012-2 And Directing Modifications, we do not support the proposed definition for Generator Cold Weather Constraint. The definition for Generator Cold Weather Constraints contained in the previous version provided the industry with useful criteria that has been lost in the revised version. And while we see value in the information provided in Attachment 1, that information could be contained in another technical document supporting this standard (i.e., Technical Rationale or Implementation Guidance), if the definition and criteria were revised to more closely align to the directives contained in the Order. To address our concerns, we offer the following edits (in boldface) to the Generator Cold Weather Constraints definition:

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods,

or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions. (*Strikethroughs have been omitted for clarity*)

Criteria used to determine a **Generator Cold Weather Constraint shall consider the following:**

{C}· **A determination through an engineering analysis that the freeze protection measures lack reasonable assurances of efficacy and there is no record that such protections have been effectively utilized on** generating units **of a** comparable types in regions that experience similar winter climate conditions;

{C}· **A determination through engineering analysis that there are no available freeze protection measures, commercially available, that have been proven to be effective at mitigating the effects of the Extreme Cold Weather Temperature identified in the region where the resource is installed**; or

{C}· **A determination through an engineering economic analysis has been made that determines that the implementation of freeze protection measures necessary to mitigate the effects of the Extreme Cold Weather Temperature, while feasible, would result in the early retirement of the resource.**

Likes 0	
Dislikes 0	

Response

Thank you for your comments. Note that industry feedback and the FERC Orders were considered in the changes proposed. “Engineering analysis” language was considered within the Standard language but industry comments regarding cost and time were provided that led the DT and Standards Committee to not consider the change. “Engineering economic analysis” directly opposes the FERC June Order language regarding inclusion of costs.

Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3,5 - WECC

Answer	No
Document Name	

Comment

PNM agrees with the comments of EEI. EEI made suggestions to change the definition, please see EEI's comments.

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
The NAGF notes that currently, there are no wind generator OEMs in the process of developing a generator that can operate at a temperature below -22 degrees F (-30 degrees C). Contracts are already being signed for sites that plan to be in service in 2027 and likely 2028. The proposed date in the first bullet under Known Constraints in Attachment 1 is not reasonable based on this information. The SDT should discuss with the OEMs if they intend to develop the capability to operate at temperatures below this to meet the requirements for wind turbines. Or if the intent is for the Generator Owner of facilities is to turn them off when temperatures reach freezing to ensure they maintain compliance with this standard. If the SDT does not engage in the recommended conversations with the OEMs, the NAGF recommends that the date be shifted to at least 2032. Based on OEM feedback provided during both the Technical Conference related to this standard and PRC-029, OEMs need 5 to 7 years normally to bring a new product to market.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. At the Technical Conference for EOP-012, OEMs also shared a “Texas” special inverter that had been designed, manufactured, and shipped in less than three years because of the need for reliable operations. The DT invited the OEMs to a Technical Conference. Technology changes when demands to improve the technology are present. GOs should be providing design requirements to OEMs that reflect the capability to operate at the ECWT.	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	No

Document Name	
Comment	
The proposed Case-by-Case language in Attachment 1 states, “The following situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the CEA will these circumstances constitute valid Generator Cold Weather Constraint:..” This language does not provide objective and sufficiently detailed criteria for applicable entities to understand what is required of them. The standard should be revised to remove the requirement for CEA validation of constraints or should more clearly define objective criteria for approval or rejection of a constraint declaration.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Note the FERC Order required validation of Generator Cold Weather Constraints. The DT defers comments regarding approval/rejection criteria to NERC staff.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
The EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process indicates “ The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.” But the standard requirements R6,R7,R8 specify the CEA and footnote 11&12 were removed. In our province the CEA and the applicable government authority are different entities. Manitoba Hydro recommends footnote 11 and 12 are added back to the standard and that for non-US Registered Entities, this additional language/guidance be added to footnote 11 and 12: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner.	

Manitoba Hydro supports the MRO_NSRF comments. The status of the CEA or applicable governmental authority in the CAP process and Generator Cold Weather Constraint process is an area of concern. Cold weather operation is normal operation in Manitoba. CEA/governmental authority oversight will create additional administrative burdens without improving BES reliability in Manitoba.	
Likes 0	
Dislikes 0	
Response	
Please see responses to MRO NSRF comments.	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	No
Document Name	
Comment	
Ameren supports EEI's and NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to those organization’s comments.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	
Comment	
See EEI's comments.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	No
Document Name	
Comment	
We support EEi's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Kimberly Turco - Constellation - 6	
Answer	No
Document Name	
Comment	
CEG Supports the NAGF response to this question. Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. Please see responses to NAGF comments.	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	No
Document Name	
Comment	
PacifiCorp supports EEI comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	No
Document Name	2024-03_Unofficial_Comment_Form_EOP-012-3_120324_SRC_FINAL.docx
Comment	

Introductory comments.

The ISO/RTO Council (IRC) Standards Review Committee (SRC) (consisting, for purposes of these comments, of CAISO, ERCOT, IESO, ISO-NE, PJM, MISO, NYISO, and SPP) appreciates the work that has gone into the revisions to Attachment 1, but is concerned that certain provisions of Attachment 1 are not consistent with FERC's guidance in its June 2024 Order. In those areas and in others where the language could create ambiguity, the SRC provides alternative language to ensure that the final Standard complies with FERC's directives and is clear and unambiguous. The SRC's primary concerns fall into six overarching categories:

- The definition of Generator Cold Weather Constraint and some of the constraints listed in Attachment 1 do not strike the right balance between recognizing current technological constraints and encouraging the development and deployment of new solutions to existing freeze protection challenges. The SRC proposes revised language for the Generator Cold Weather Constraint

definition and Attachment 1 that is designed to better incentivize technological advancements while respecting current technological limitations.

- Part 2.1 of Requirement R2 does not comply with FERC's directive in paragraph 72 of the June 2024 Order that "any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date." The SRC proposes revised language to address this issue.

- Items 5.a and 5.c in the case-by-case constraint list in Attachment 1, which allow constraint declarations to avoid premature unit retirement or cancellation of planned units, although theoretically understandable, are overbroad, subjective, and unauditable and would require NERC and the Regional Entity to review forward market prices and the economics of particular units in order to properly assess if the requirement to winterize actually was the cause of a premature retirement or the cancellation of a planned new generating unit. Such language does not meet FERC's directive that constraint criteria be objective, unambiguous, and auditable.

- The SRC proposes additional language for the end of Attachment 1 to provide an avenue for the RC or BA to contribute to the analysis of individual constraint declarations as appropriate without imposing compliance obligations on the RC or BA.

- While the SRC believes Generator Cold Weather Constraints should be reviewed annually under Requirement R9, the 36-month review cycle in the current draft of EOP-012-3 would be more effective if it required Generator Owners to react to new information that may become available in between reviews. It would also be more effective if review results were required to be submitted to the Compliance Enforcement Authority (CEA) to enable the CEA to stay better informed of the overall pace of changes of freeze protection technology within the industry.

- The revisions to Part 1.1 of Requirement R1 regarding missing or invalid temperature data are not required to address FERC's directives from the June 2024 Order. The topic of missing or invalid data could be more effectively addressed through a dedicated working group as the industry gains real-world experience with the limitations of available datasets.

The SRC believes that generator weatherization, EOP-012-3 effectiveness, and the development of new freeze protection technologies would be significantly enhanced if NERC provided a transparent method of collecting and disseminating best practices and technological advancements to the industry. Collecting and disseminating such information would be consistent with FERC's directive in Paragraph 47 of the June 2024 Order that:

"*To the extent that NERC continues to believe that the extent of industry adoption for winterization technologies should be a criterion for declaring a constraint, NERC should clearly explain in its filing how it will assess the extent of such adoption in a way that provides for consistent compliance and enforcement outcomes."*

Affected generation owners and the regional entities enforcing the standard would both benefit from the availability and use of such transparent information portals in their decision-making. Although the SRC recognizes that EOP-012-3 appropriately focuses on Generator Owner actions rather than on NERC activities, the SRC has proposed changes to the standard language that would provide clearer direction on how generators can stay abreast of technology changes and industry best practices. The SRC believes that these additions will address FERC's directive from paragraph 47 of the June 2024 Order that NERC explain clearly '*how it will assess the extent of such [industry] adoption in a way that provides for consistent compliance and enforcement outcomes."*

Known constraint list, item #3.

Request: Revise item 3 of the known constraint list to read as follows: "Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities when wind turbine blades with effective de-icing or ice-minimizing capabilities were not made commercially available by the OEM for generating units of comparable types in regions that experience similar winter climate conditions at the time the existing blades were procured."

Justification: The SRC is concerned that the third item on the known constraint list could result in a scenario where a Generator Owner deliberately chooses to construct a unit with substandard wind turbine blades and subsequently seeks to declare a constraint. The SRC agrees that unit owners should not be required to replace existing blades solely because more effective blades subsequently become available. However, if a Generator Owner deliberately chooses to purchase and install substandard blades at a time when more effective blades are available, the Generator Owner should not be able to claim a constraint as a result of the decision to sacrifice performance to reduce construction costs. Otherwise, the standard, as proposed, would invite the use of the constraint process to avoid the consequences of decisions to install substandard equipment by creating an unjustified safe harbor for Generator Owners that chose not to perform winterization that should have occurred when the blades were purchased and installed.

To address this concern, the SRC recommends that this item be revised to read as follows: "Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities when wind turbine blades with effective de-icing or ice-minimizing capabilities were not made commercially available by the OEM for generating units of comparable types in regions that experience similar winter climate conditions at the time the existing blades were procured."

Case-by-case constraint list, item #2.

Request: Remove item 2 on the case-by-case constraint list, or revise it read as follows: "For generating units that began commercial operation before October 1, 2027, the implementation of a specific freeze protection measure would require exceeding a structural limitation of, or otherwise reasonably be expected to functionally impair the effective operation of, a specific component that is necessary to the safe and effective operation of the generating unit or facility."

Justification: The SRC is concerned that item 2 on the list of case-by-case constraints in Attachment 1 is overly broad. As currently drafted, item 2 could be understood to mean that any manufacturer design limitation is valid grounds for a constraint, even if the design limitation affects only a portion of the plant and can easily be worked around (for example, if the design limitation consists of a minimum operating temperature for a piece of equipment that can easily be kept warm with an external heater) or if the manufacturer of the

equipment in question is no longer in business or is otherwise unavailable to opine on the feasibility of implementing a freeze protection measure that was not considered when the equipment in question was originally designed and constructed.

In other words, the SRC is concerned that item 2 could be understood to imply that generators do not need to winterize to temperatures below the designed minimum operating temperature of some component of the plant (even if it would be technically feasible to do so through measures such as the addition of external heat sources).

Additionally, it is not clear to the SRC what scenario item 2 addresses that could not be addressed equally well by item 1 or item 3.b., and the SRC therefore recommends that item 2 be removed. If the drafting team elects to retain item 2, the SRC recommends that item 2 be limited as follows to scenarios in which an existing plant is physically unable to accommodate the freeze protection measures:

"For generating units that began commercial operation before October 1, 2027, the implementation of a specific freeze protection measure would require exceeding a structural limitation of, or otherwise reasonably be expected to functionally impair the effective operation of, a specific component that is necessary to the safe and effective operation of the generating unit or facility."

Case-by-case constraint list, item #4 & Generator Cold Weather Constraint definition.

Request—GCWC definition: return to the definition of Generator Cold Weather Constraint that was proposed in the October draft of EOP-012-3, or revise the second sentence of the Generator Cold Weather Constraint definition to read as follows:

"Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would reasonably be expected to result in effective facility performance while operating at the Extreme Cold Weather Temperature."

Request—item 4: revise item 4 of the case-by-case constraint list to read as follows:

"A determination, through an analysis (which may be supported by an analysis of industry best practices and the state of proven technologies), that the freeze protection measure has been shown to be ineffective or could reasonably be expected to be ineffective in enabling facility performance while operating at the Extreme Cold Weather Temperature."

Justification—Industry practice: While the SRC agrees with the language in the first portion of item 4 of the case-by-case constraint list in Attachment 1, the SRC is concerned that neither the second portion of item 4 nor the new language added to the Generator Cold Weather Constraint definition are responsive to FERC's directive in Paragraph 47 of the June 2024 Order. Specifically, Paragraph 47 states:

To the extent that NERC continues to believe that the extent of industry adoption for winterization technologies should be a criterion for declaring a constraint, NERC should clearly explain in its filing how it will assess the extent of such adoption in a way that provides for consistent compliance and enforcement outcomes.

The language in the second portion of item 4 and the new language (reinstated from Project 2021-07) added to the Generator Cold Weather Constraint definition both indicate that the extent of industry adoption of winterization technologies should be a criterion for declaring a constraint, but do not explain how the extent of such adoption will be assessed in a way that provides for consistent compliance and enforcement outcomes. Consequently, the SRC believes this language is inconsistent with FERC's directive.

The SRC is also concerned that this language could be construed to allow generating units to ignore technological advancements in freeze protection technology, as any new technology needs to have at least one early adopter before it can develop the track record necessary to conclude it has been effectively utilized on similar types of units in areas with similar winter weather conditions. If no unit owner is willing to try a new freeze protection technology, there will never be a record that the technology has been effectively utilized, and constraints that are based on the absence of that technology will continue to remain in effect.

While the SRC recognizes that FERC did not categorically reject the use of industry practice as a barometer for measuring the technological effectiveness of freeze protection measures, any reliance on industry practice should follow FERC's directive in Paragraph

47 of the June 2024 Order. Additionally, current industry practice should not be the sole barometer of technology effectiveness for the application of freeze protection measures. Industry practice proved ineffective to ensure reliable performance during Winter Storms Uri and Elliott, resulting in the development of EOP-012. Additionally, current industry practice may not capture technological advances in freeze protection measures, and basing constraints on current industry practice alone may create an incentive for generating units to avoid implementing technological advancements in freeze protection measures in order to keep industry practice static and maintain the validity of existing constraints.

While industry practice and experience may provide valuable supporting information in demonstrating that an entity meets the criteria for declaring a constraint, it should not form the sole basis for or definition of what constitutes a constraint. For these reasons, the SRC recommends that the constraint not be based on 'current industry practice.' Rather, the basis of the constraint should be the effectiveness of the freeze protection measures in question. Information about industry best practices and technological advancement or why a unit is not compatible with an application of best practices and new technologies may be useful information for the CEA in evaluating the validity of the constraint declaration. To aid in the implementation of this requirement and save Generator Owners from having to consult multiple sources of information on technological advancements, the SRC proposes in its introductory comments above that NERC develop and maintain a database of best practices and winterization technology advancements.

Justification—Drafting best practice: As a matter of drafting practice, the SRC also disagrees with including language that clarifies the definition of freeze protection measures within the Generator Cold Weather Constraint definition, as nested definitions can make it difficult to analyze the meaning of a standard. If the term *freeze protection measures* does not appear in the NERC Glossary of Terms, an entity should be able to conclude that the dictionary definition or common meaning of the term applies. The entity should not need to begin reviewing other defined terms in the NERC Glossary just to ensure that no other term contains language limiting or clarifying the meaning of *freeze protection measures*.

Justification—Burden on Generator Owners: Finally, the SRC is concerned that a constraint based on undefined "industry practice" could be difficult for Generator Owners to document and burdensome for the CEA to review. Without the SRC's suggested NERC database of best practices and technological developments as described above, it is not clear how thoroughly a Generator Owner would need to survey the current state of industry in order to convince the CEA that "no record" exists of a given freeze protection measure being effectively used elsewhere, nor is it clear how the CEA would evaluate such a survey. Even if a Generator Owner could convincingly

demonstrate that no record exists of a freeze protection measure being effectively used elsewhere, such a demonstration would not necessarily be dispositive of the question of whether the freeze protection measure would function effectively or whether there are legitimate technical or operational reasons the freeze protection measure should not or could not be applied to a particular generating unit or facility.

Proposed solutions: To address these concerns, the SRC recommends that the drafting team either return to the definition of Generator Cold Weather Constraint that was proposed in the October draft of EOP-012-3 or revise the second sentence of the Generator Cold Weather Constraint definition to focus on the inherent effectiveness of the freeze protection measure rather than on industry practice, as follows:

"Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would reasonably be expected to result in effective facility performance while operating at the Extreme Cold Weather Temperature."

The SRC likewise recommends that item 4 of the case-by-case constraint list be revised to read as follows:

"A determination, through an analysis (which may be supported by an analysis of industry best practices and the state of proven technologies), that the freeze protection measure has been shown to be ineffective or could reasonably be expected to be ineffective in enabling facility performance while operating at the Extreme Cold Weather Temperature."

Case-by-case constraint list, item #5.

The SRC notes that evaluating constraints based on the impact of potential generating unit retirements may be difficult without input from the RC or BA, as these functional entities have visibility into the overall state of the bulk-power system and the generator interconnection queue that individual Generator Owners likely do not possess. Later on in these comments, the SRC proposes some additional language for the end of Attachment 1 to provide an avenue for the RC or BA to contribute to the analysis as appropriate without imposing compliance obligations on the RC or BA.

Case-by-case constraint list, item #5.a.

Request: Remove item 5.a from the case-by-case constraint list.

Justification: The SRC recommends that item 5.a on the case-by-case constraint list in Attachment 1 be removed, as it does not meet FERC's directive that constraint criteria be objective, unambiguous, and auditable. The proposed language in item 5.a does not address how "accelerated" or "premature" a retirement must be in order to qualify as a constraint, nor does it provide a basis for making an auditable determination that the requirement to implement freeze protection measures was the clear cause of the premature retirement.

To effectively evaluate whether the requirement to winterize "resulted" in a "premature retirement," auditors would have to examine the cost of the freeze protection measures, forecasts of future energy prices, and commercially sensitive data about unit operating costs and profitability to determine whether winterizing the unit would truly be uneconomic over the unit's future remaining life. Moreover, the analysis would also need to consider the across-the-board electricity price impacts that would result from competitors of that unit attempting to pass through the costs of similar weatherization work. Such price increases could offset the costs of implementing freeze protection measures, making it extremely difficult to effectively review or audit a determination that the requirement to implement the winterization measure 'resulted' in premature retirement. Such a review or audit would likely require a complete examination of the projected future profitability of the unit under a range of scenarios.

This degree of economic analysis and forecasting is not an appropriate role for NERC or the Regional Entities, nor is it their traditional area of expertise. It would also involve what could be a highly subjective examination of that unit's competitive position relative to its peers on a forward-looking basis. As a result, although the SRC respects the SDT's efforts to avoid driving unit retirements, creating a blanket exemption for units that otherwise would 'prematurely retire' creates an unworkable and unauditable exception that could stymie enforcement of EOP-012-3 and frustrate the underlying intent of improving weatherization for all generation.

Along these same lines, item 5.a would also require the unit owner to prognosticate on whether 'acceptable replacements' are available for its unit. In competitive markets, this information is highly confidential and market sensitive, leaving the Generator Owner declaring the constraint unable to make the required showing.

For these reasons, and in light of FERC's directive that constraint criteria be objective, unambiguous, and auditable, the SRC urges the elimination of item 5.a as written. Item 6 on the case-by-case constraint list is sufficient to address generating unit retirements.

Case-by-case constraint list, item #5.b.

Request: Remove item 5.b from the case-by-case constraint list.

Justification: While the SRC recognizes that item 5.b, which addresses the potential cancellation of planned new generating units, aligns closely with language that the June 2024 Order indicated may be acceptable, the SRC believes item 5.b similarly lacks an objective standard that the CEA could use to determine whether implementation of the freeze protection measures 'caused' the Generation Owner to cancel plans to finish development of a new generating unit.

Decisions to cancel a unit are based on many factors, including changes to the underlying economics of developing the unit. In this case, evaluating the asserted basis for cancelling the development of the planned new generating unit would require NERC or the Regional Entity to attempt to forecast future generator revenues while accounting for higher wholesale electricity prices resulting from increased costs faced by other units as a result of installing freeze protection measures. NERC and the Regional Entity might have to examine minutes of Board meetings and question company officials in order to effectively determine whether the decision to cancel the development of the new unit was truly 'caused' by the requirement to install freeze protection measures instead of some other factor, such as higher interest rates or increased permitting costs (as compared to expected future revenues).

This constraint is unauditable without a level of investigation and examination of company decision making that is beyond what is reasonable in the context of evaluating a constraint declaration. For these reasons, as well as those addressed in the discussion of item 5.a above, the SRC believes that item 5.b is not objective, unambiguous, and auditable and should be removed. A unit that is unavailable on a cold, peak-demand day because of inadequate freeze protection measures is of little value. As a result, a blanket constraint that would allow such units to remain on the system based on unauditable assertions that the Generator Owner would otherwise 'prematurely retire' the unit or 'cancel' the construction of a new generating unit undermines the goal of ensuring reliability by bringing all generating units up to a minimum winterization level (subject to only a limited set of constraints based on the physical limitations of certain units) based on expected conditions.

Case-by-case constraint list, item #5.c.

The SRC recommends that the language at the end of item 5.c on the case-by-case constraint list in Attachment 1 be revised to read as follows to clarify the meaning of the language: " . . . during conditions in which freeze protection measures are not required to ensure reliable operation of the generating unit."

Case-by-case constraint list, items #5.c and #5.d.

Request: The SRC recommends that the references to "TP, RC, BA, etc." in items 5.c and 5.d of the case-by-case constraint list be replaced with references to just the RC.

Justification: Larger entities will often be registered as BAs or TPs in addition to being registered as Generator Owners. According to the NERC Compliance Registry as of the date of these comments, 69 Generator Owners are also registered as BAs, while 117 Generator Owners are also registered as TPs. In contrast, only four Generator Owners are also registered as RCs. Even though this analysis does not account for scenarios in which a Generator Owner has a corporate affiliate that is registered as an RC, BA, or TP, it still indicates that, for a given constraint declaration, the RC is more likely to be an independent entity that can offer an unbiased, third-party perspective on the appropriate reliability threshold for items 5.c and 5.d.

Case-by-case constraint list, item #9.

Request: Revise item 9 of the case-by-case constraint list to read as follows: "Implementation of freeze protection measures would not increase reliability of a generating unit due to clearly delineated fuel supply restrictions imposed for technical or physical reasons by the generating unit's fuel supplier that the generating unit has communicated to its Reliability Coordinator or Balancing Authority."

Justification: The SRC is concerned that item 9 on the case-by-case constraint list in Attachment 1 could be construed to provide a basis for constraints based on speculation regarding potential fuel supplier nonperformance during cold weather or past intermittent fuel supplier performance issues. While the SRC agrees that a constraint may exist in a scenario in which the fuel supplier notifies the Generator Owner in advance that it is categorically unable to supply fuel below a certain temperature, the SRC is concerned that item 9 goes beyond this scenario.

As currently drafted, item 9 could be understood to allow a constraint in a scenario in which a Generator Owner's fuel supplier has a poor track record of delivering fuel in certain weather conditions, but sometimes delivers fuel in those conditions. A track record of intermittent performance by a Generator Owner's fuel supplier should not be grounds for a constraint, as the definitions of Fixed Fuel Supply Component, Generator Cold Weather Critical Component, and Generator Cold Weather Reliability Event all explicitly exclude factors that are outside of the Generator Owner's control.

To address this concern, the SRC recommends that item 9 be revised as follows so that it is limited to a scenario in which it is known in advance that a fuel supplier is categorically unable to supply fuel in certain conditions: "Implementation of freeze protection measures would not increase reliability of a generating unit due to clearly delineated fuel supply restrictions imposed for technical or physical reasons by the generating unit's fuel supplier that the generating unit has communicated to its Reliability Coordinator or Balancing Authority."

End of Attachment 1.

The SRC recommends that the last paragraph in Attachment 1 be revised to read as follows to clarify that the relevant Reliability Coordinator or Balancing Authority may choose to provide information that would assist the CEA in evaluating certain types of constraints and to clarify that a valid constraint declaration does not necessarily carry any weight for purposes of any non-EOP-012 regulatory regimes that may apply to the unit in question: When submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply. ***If a Generator Cold Weather Constraint declaration indicates that the application of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk-Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s), the documentation that defends and supports the constraint should include any assessment that the applicable Balancing Authority or Reliability Coordinator might agree to provide concerning the impact to the reliability of the Bulk-Power System if the constraint were to be granted.*** An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3***, and does not in any way purport to relieve the Generator Owner of any other legal obligations or requirements outside of the requirements of EOP-012-3, including tariff, regulatory, or statutory obligations or requirements***.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The drafting team has reviewed the comments and discussed against the SAR work scopes as well as the FERC Directives. The drafting team and Standards Committee made some modifications where appropriate.

Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	
Comment	

Invenergy appreciates the work of the drafting team and agrees with many of the edits to Attachment 1 in Draft 2. That said, we would like the drafting team to consider the comment below.

Please consider revising bullet 1 of the Known Generator Cold Weather Constraints to read, “Individual wind turbine towers that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1.” The structural limitations of wind turbine towers relative to extreme cold temperatures are not limited to only existing wind turbine towers as implied by the revisions in Draft 2. The same or similar structural limitations will also be present in wind turbine towers manufactured after October 1, 2027, and for the foreseeable future.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The drafting team has reviewed the comments and discussed against the SAR work scopes as well as the FERC Directives. The drafting team and Standards Committee made some modifications where appropriate.

Rhonda Jones - Invenergy LLC - 5

Answer	No
Document Name	

Comment

Invenergy appreciates the work of the drafting team and agrees with many of the edits to Attachment 1 in Draft 2. That said, we would like the drafting team to consider the comment below.

Please consider revising bullet 1 of the Known Generator Cold Weather Constraints to read, “Individual wind turbine towers that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1.” The structural limitations of wind turbine towers relative to extreme cold temperatures are not limited to only existing wind turbine towers as implied by the revisions in Draft 2. The same or similar structural limitations will also be present in wind turbine towers manufactured after October 1, 2027, and for the foreseeable future.

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The drafting team has reviewed the comments and discussed against the SAR work scopes as well as the FERC Directives. The drafting team and Standards Committee made some modifications where appropriate.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC	
Answer	Yes
Document Name	
Comment	
WECC appreciates the efforts made by the DT to clarify Generator Cold Weather Constraints in Attachment 1. Consider adding additional guidance, if given the chance, to the Technical Rationale regarding like events at “similar” units.	
Likes 0	
Dislikes 0	
Response	
Thank you for your constructive comments.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	
While NRG agrees with the changes to Attachment 1, the cost of implementing many of the actions that are up for subjective review may be a large driver of an owner filing for a Generator Cold Weather Constraint. We understand NERC’s lack of authority in addressing cost considerations as a basis for a constraint. NRG’s concern is that the owner and the CEA may end up talking past one another in Case-by-Case determinations since cost issues are not addressed in the attachment. While the SDT assures the industry that cost considerations	

can be addressed, the plain language in Attachment 1 can be read not to allow this. This may force owners into decisions, including unit retirement, that will have an unwanted impact on reliability. *While the language as proposed does provide known constraints for solar power facilities in Attachment 1, the terminology of "solar panels" used in the 5th bullet of the known constraint section may be perceived as too constrictive. There are solar facilities that utilize heliostats to focus solar energy, and the heliostats have similar characteristics making freezing precipitation not feasible to remedy. NRG believes that the terminology of "solar panels" was chosen due to its more colloquial understood meanings, which would include heliostats, but NRG believes distinct identification of technologies in known constraints would lead to clarity during constraint declarations and audits.*	
Likes 0	
Dislikes 0	
Response	
Thank you for your constructive comments. The June FERC Order was explicit on removal of cost and similar language.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
While NRG agrees with the changes to Attachment 1, the cost of implementing many of the actions that are up for subjective review may be a large driver of an owner filing for a Generator Cold Weather Constraint. We understand NERC's lack of authority in addressing cost considerations as a basis for a constraint. NRG's concern is that the owner and the CEA may end up talking past one another in Case-by-Case determinations since cost issues are not addressed in the attachment. While the SDT assures the industry that cost considerations can be addressed, the plain language in Attachment 1 can be read not to allow this. This may force owners into decisions, including unit retirement, that will have an unwanted impact on reliability. *While the language as proposed does provide known constraints for solar power facilities in Attachment 1, the terminology of "solar panels" used in the 5th bullet of the known constraint section may be perceived as too constrictive. There are solar facilities that utilize heliostats to focus solar energy, and the heliostats have similar characteristics making freezing precipitation not feasible to remedy. NRG believes that the terminology of "solar panels" was chosen due to its more colloquial understood meanings, which would include*	

heliostats, but NRG believes distinct identification of technologies in known constraints would lead to clarity during constraint declarations and audits.	
Likes 0	
Dislikes 0	
Response	
Thank you for your constructive comments. The June FERC Order was explicit on removal of cost and similar language.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy agrees with the Case-by-Case language.	
Likes 0	
Dislikes 0	
Response	
Thank you for your supportive comments.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
Within Attachment 1 is the revised definition of Generator Cold Weather Constraint, which we do not fully support. To address our concerns, we offer the following edits in boldface (below) for DT consideration, which are intended to limit entity obligations to address those freeze protection measures that have been shown to be effective in areas with similar winter weather conditions.	

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. **Viable f**reeze protection measures include practices, methods, or technologies **that have been successfully** implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.

EEI also suggests changes to the 4th bullet that addresses the "accumulation of frozen precipitation on solar panels." While EEI is supportive of this predefined limitation that recognizes the technical problems associated with ice and snow clearing on solar panels, we also believe the proposed language does not align with the other four (4) Generator Cold Weather Constraints. To address this concern, we suggest the following changes in boldface to bullet 4:

Implementation of technologies for the mitigation of accumulated frozen precipitation on solar panels.

Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	

Response

Thank you for your constructive comments. The verbiage provided ("viable" and "have been successfully") were not accepted by the DT. Concerns were raised regarding the need to allow innovation and improvements in freeze protection measures to occur while balancing the thought that new technologies are new until proven to work. New technologies are not required to be implemented as a result of a single GO testing the technology. The DT and Standards Committee reviewed the Generator Cold Weather Constraints and provided some updates.

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro

Answer	Yes
Document Name	

Comment

BC Hydro appreciates the drafting team efforts and the opportunity to comment, and offers the following.

The Attachment 1 repeats the Generator Cold Weather Critical Component (GCWCC) definition. As this will be part of the NERC Glossary of Terms, BC Hydro suggests that its direct reference is sufficient, and that the second paragraph of the Attachment 1 can be removed.

Likes 0	
Dislikes 0	
Response	
Thank you for your constructive comments.	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	Yes
Document Name	
Comment	
AZPS agrees with this approach	
Likes 0	
Dislikes 0	
Response	
Thank you for your supportive comments.	
Nikki Carson-Marquis - Nikki Carson-Marquis On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Nikki Carson-Marquis	
Answer	Yes
Document Name	
Comment	
Minnkota Power Cooperative supports comments made by the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to MRO NSRF comments.	

Mary Smith - Southern Indiana Gas and Electric Co. - 1,3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
SIGE supports EEI comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Daniel Gacek - Exelon - 1, Group Name Exelon	
Answer	Yes
Document Name	
Comment	
Exelon supports the comments submitted by the EEI	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	Yes
Document Name	
Comment	

See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Additionally, Southern Company agrees with the changes recommended by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Lovita Griffin - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Michael Dillard - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tony Hua - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Erin Wilson - NB Power Corporation - New Brunswick Power Transmission Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Darcy O'Connell - California ISO - 2	
Answer	
Document Name	
Comment	
CAISO agrees with comments submitted by the ISO/RTO Counsel (IRC) Standards Review Committee	
Likes 0	

Dislikes 0	

Response
Thank you for your comments. Please see responses to IRC comments.

Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	

Comment
Texas RE is has the following clarification recommendations: • Consider revising case 3e and move the verbiage to 3 (recommended change in bold):   ○ "The implementation of a specific freeze protection measure is precluded by technical or physical limitations, **as determined through operating experience or engineering analysis and supported with justification**. For example:" This edit clarifies the criterion by which situation 3 circumstances are determined, without introducing what could be perceived as an additional set of circumstances. • Consider revising case 5e in a similar manner. • In case 4, consider removing the verbiage "or that there is no record that such a measure has been effectively utilized" as it is unclear how an entity would provide evidence that there is no record of a measure being effectively utilized in comparable circumstances. • Consider removing case 10. While it allows for possibilities not thought of by the SDT, this Texas RE is concerned it is overly broad and permissive. If it is retained, consider replacing "limit" with "preclude" since it is the latter term that defines a Generator Cold Weather Constraint.

Likes 0	
Dislikes 0	

Response
Thank you for your constructive comments.

2. In paragraph 68 of the June 2024 Order, FERC directed NERC to modify Requirement R7 of EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. FERC provided an example for how to address this directive, such as to require shorter timeframes for those units that have experienced issues and allow longer timeframes to address similar potential issues across a fleet for those units that have not experienced issues. **The drafting team modified Requirement R6 based on industry feedback, while still maintaining the FERC directive. Do you agree that the modifications in Requirement R6 are responsive to the FERC Directives? If you do not agree, please provide your language change suggestions for the drafting team.**

Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	
Comment	
Invenergy believes Requirement R6, specifically R6.3.5.1. and the accompanying footnote, remains too subjective and does not provide a uniform amount of time to Generator Owners to implement any needed corrective actions following an event. For example, does an	

event experienced in September qualify as “early in the season,” and therefore require implementation of corrective actions prior to December 1 of that same year? Invenergy understands FERC’s desire for shorter deadlines to implement corrective actions, and we believe an 18-month timetable from the date of the event both meets FERC’s desire and provides the necessary clarity and flexibility for Generator Owners to schedule needed maintenance outages in a manner that supports BES reliability and keeps generators online.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team and Standards Committee believe the language is clear and meets the FERC Order.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	
Comment	
OPG support NB Power's comment: Requirement R6 assumes that Generator Cold Weather Reliability Events are identified based on their definition, but there is a weakness in the definition of Generator Cold Weather Reliability Event that may make it unsuitable for auditing in its present form. The issue stems from the fact that a Generator Cold Weather Reliability Event is defined in terms of “apparent cause”: *Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner’s control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:* *(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;* *(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or* *(3) a Forced Outage*	

Thus the definition of Generator Cold Weather Reliability Events is based on apparent causes(s) and Apparent Cause Analysis (ACA).

Referring to *Cause Analysis Methods for NERC, Regional Entities, and Registered Entities – September 2011*, Section 3.4, *Apparent Cause Analysis (quoting Revision 2, dated September 20, 2011 in the version history table)*:

An apparent cause is defined as a determination based on the evaluator's judgment and experience, and where reasonable effort is made to determine WHY the problem occurred. ACA seeks to determine why the problem occurred based on reasonable effort and the investigator's judgment and experience (the investigator is often a subject matter expert.) The emphasis of an ACA is primarily to correct a particular event or problem without a special effort to identify the underlying system or process problems that may have contributed to the problem. Performing an ACA should not prevent the identification and correction of these underlying contributors if they can be discovered and addressed easily. Several tools can be used to accomplish an ACA. One of the simplest and most effective tools is the "why staircase."

NOTE: ACA is not industry standard for system disturbances or major events and is not referenced in the Department of Energy (DOE) Guidelines for Root Cause Analysis. A proper corrective action plan cannot be determined based on apparent causes. To establish proper corrective action plans to prevent reoccurrence, the root causes of the event must be determined. By only looking at apparent causes, the underlying root cause may be overlooked allowing a reoccurrence of the deficiency leading to the event.

Thus, according to NERC's guidelines, an apparent cause is based on the evaluator's judgment and experience, and is not suitable for the determination of a proper corrective action plans. Quoting NERC's guidance, "to establish proper corrective action plans to prevent reoccurrence, the root causes of the event must be determined. By only looking at apparent causes, the underlying root cause may be overlooked, allowing a reoccurrence of the deficiency leading to the event."

In order to determine proper corrective action plans, a proper root cause analysis must be completed; however, undertaking proper root cause analysis requires time, planning, and resources. Moreover, northern and Canadian entities operate in sub-freezing temperatures for substantial parts of each year. Many generator outages, derates, and startup failures occur in sub-freezing temperatures for reasons completely unrelated to "freezing of equipment" or "freezing precipitation." To require that all outages, derates, and startup failures must be investigated to a level to convince an auditor that there is no possible link to freezing weather outside, and thus is not a Generator Cold Weather Reliability Event would impose a disproportionate burden on northern and Canadian entities, many of which have extensive experience operating reliability in sub-freezing temperatures. Exposing northern and Canadian entities to an audit in

which their identification of "apparent causes" based on "judgement and experience" is called into question after the fact by an auditor who may not have the background or contextual information about the equipment and may not have had extensive experience with regional weather patterns is likely to lead to inconsistent audit outcomes and disproportionate compliance burden that will do little or nothing to improve system reliability.

The process of selecting generator outages, derates, and startup failures for investigations that would be worthwhile to investigate for possible identification as Generator Cold Weather Reliability Events will necessarily be different from region to region due to regional variations in weather and climate, generating station design, operating experience, and even language (e.g., what Americans call 'sleet' is referred to as 'ice pellets' in Canada). Thus, it is suggested to split the implicit requirement to investigate generator forced outages and derates and startup failures out of Requirement R6 and write a new requirement (here styled R10), something like:

R10. Each Generator Owner of generating units with Extreme Cold Weather Temperatures at or below 32°F/0°C and that self-commit or are required to operate at or below 32°F/0°C shall implement a documented process to identify, investigate, and analyze root causes for the subset of generator forced outages, forced derates, and startup failures that is likely to lead to the identification of Generator Cold Weather Reliability Events. Such a process shall include:

Criteria for selecting candidate generator forced outages, forced derates, and startup failures to be investigated,

A requirement that at least one [or some minimum number] forced outage, forced derate, or startup failure occurring at temperatures at or below 32°F/0°C minimum number be selected for investigation each year unless no such events occur,

A systematic methodology for investigating, analyzing the root causes of, and developing Corrective Action Plans for selected forced outages, forced derates, and startup failures, and

{C}· *Criteria for determining if a generator forced outage, forced derate, or startup failure is in fact a Generator Cold Weather Reliability Event.*

With the addition of a documented process to identify Generator Cold Weather Reliability Events, Requirement R6 could be rewritten to begin:

R6. Each Generator Owner shall, when experiencing a Generator Cold Weather Reliability Event identified pursuant to Requirement R10, develop and implement a Corrective Action Plan(s) to address the identified root causes as follows…

The application of a documented, systematic methodology to select, analyze root causes for, and develop Corrective Action Plans for Generator Cold Weather Reliability Events would lead to more consistent audit outcomes by removing auditor judgment from the

evaluation of causal analysis and better reliability outcomes through the completion of properly established Corrective Action Plan(s) based on systematic root cause analysis.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The drafting team considered the comments and discussed against the SAR work scopes as well as the FERC Directives. Given that this definition was in the previously approved standard and not subject to a Directive, no changes were made.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	
Comment	
Section 6.4 and the Generator Cold Weather CAP Extension and Constraint Process need to align with one another. The Standard and the Process should make allowances for changes to a CAP schedule *due to circumstances beyond the GOs control* that may occur within 60 days of the original CAP deadline. An example is a generator that is scheduled for a Planned Outage to conduct the work and due to unexpected weather or other constraints within the generators system, the outage is reschedule by the TP or BA. This often occurs at the last minute and will put the GO past the “60 calendar days before the original CAP due date” required by the Extension Process. We suggest specifying in the standard a specific due date for applying for CAP extensions with the allowable exceptions. Sixty days prior is unreasonable when there are many issues beyond the GO’s control that could affect the implementation schedule of a CAP with the aforementioned 60 calendar days.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT discussed setting a timeframe for applying for CAP extensions but felt the language provided, in conjunction with the flexibility provided in the NERC process, was reasonable.	

Colin Chilcoat - Invenergy LLC - 6	
Answer	No
Document Name	
Comment	
Invenergy believes Requirement R6, specifically R6.3.5.1. and the accompanying footnote, remains too subjective and does not provide a uniform amount of time to Generator Owners to implement any needed corrective actions following an event. For example, does an event experienced in September qualify as “early in the season,” and therefore require implementation of corrective actions prior to December 1 of that same year? Invenergy understands FERC’s desire for shorter deadlines to implement corrective actions, and we believe an 18-month timetable from the date of the event both meets FERC’s desire and provides the necessary clarity and flexibility for Generator Owners to schedule needed maintenance outages in a manner that supports BES reliability and keeps generators online.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team and Standards Committee believe the language is clear and meets the FERC Order.	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	No
Document Name	
Comment	
PacifiCorp supports EEI comments.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. Please see responses to EEI comments.	
Kimberly Turco - Constellation - 6	
Answer	No
Document Name	
Comment	
CEG Supports the NAGF response to this question. Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to NAGF comments.	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	No
Document Name	
Comment	
We support EEi's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	

Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	
Comment	
See EEI's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	No
Document Name	
Comment	
Ameren supports EEI's and NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to those organization’s comments.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	No
Document Name	
Comment	

We at ACES greatly appreciate the tremendous effort put forth by the drafting team in developing the proposed updates to EOP-012-2 in accordance with the FERC directives.

From the perspective of ACES, the proposed modifications to Requirement R6 are an improvement over previous drafts; however, we believe further refinement would be beneficial. We believe that, as written, the timelines identified in Requirement R6 are too ambiguous and may unduly discriminate against a GO based solely upon the date the generating unit(s) experienced a Generator Cold Weather Reliability event.

It is our opinion that any required compliance timelines would be best defined by removing the inherent obscurity associated with using specific calendar days. In short, we recommend using a timeline based solely on a clearly defined quantity of calendar days and removing all references to explicit months and/or days. Please consider the following hypothetical scenarios as an illustration:

- Generating Unit 1 belonging to Entity A experiences a Generator Cold Weather reliability event on October 22nd, 2025. Per the currently proposed version of Requirement R6 Part 6.3.5.1, Entity A has until December 1st, 2026, to implement a CAP.
- Generating Unit 2 belonging to Entity B experiences a Generator Cold Weather reliability event on March 17th, 2025. Per the currently proposed version of Requirement R6 Part 6.3.5.1, Entity B has until December 1st, 2026, to implement a CAP.
- In the above examples, Entity A is allowed 406 calendar days after their event to implement a CAP whereas Entity B is only allowed 260 calendar days after the same event type to do the same.
    - This results in an unequal application of the Reliability Standard by granting Entity A an additional 146 calendar days to complete the same, or substantially similar, compliance activities as Entity B.

It is the viewpoint of ACES that entities should be provided with the **same** length of time to complete compliance activities required by a Reliability Standard. We recommend that the timeline in part 6.3.5.1 be modified to 12 calendar months regardless of when the Generator Cold Weather Event occurs.

Additionally, it is our opinion that the timeline to address similar potential issues across a fleet is too short. We are concerned that a GO with either a large generating fleet (large IOU) or limited resources (small electric cooperative), may not be able to complete all corrective actions on all applicable units within 24 calendar months of the GCWRE. This is especially true when considering that an entity has 12 calendars months following the GCWRE to complete the review required by part 6.2. We recommend that part 6.3.5.2 be modified to 24 calendar months following the development of the CAP as required by part 6.2.

Thus, we recommend modifying Requirement R6 as follows (note: for the sake of brevity, the text for any sections without recommended changes has been omitted): 6.3.5. A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows: 6.3.5.1. For the generating unit experiencing the Generator Cold Weather Reliability Event, no later than twelve (12) calendar months following the Generator Cold Weather Reliability Event. 6.3.5.2. For other generating unit(s) owned by the Generator Owner, no later than twenty-four (24) calendar months following the development of a Corrective Action Plan under Part 6.2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team and Standards Committee believe the language meets the urgency noted within the FERC Order.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	No
Document Name	
Comment	
Southern Company recommends modifying Requirement 6 to allow 24-calendar months to implement changes to like equipment after the allowed 12-calendar month review of similar units of the GO, per EEI comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	

Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Manitoba Hydro recommends that for non-US Registered Entities: Prior to the implementation of any element of a Corrective Action Plan developed in accordance with this Requirement all applicable corporate, regulatory, provincial, and federal evaluations and approvals must be completed and obtained. The applicable timeline for implementation of a Corrective Action Plan shall be determined by the Registered Entities Generator Owner. A concern with Requirement R6 is that many outages, derates, and start-up failures would have no relationship to the fact that the weather happens to be below freezing when they occur, and an implicit requirement to investigate all outages and derates to rule out freezing equipment and freezing precipitation as causes would result in a disproportionate compliance burden on Canadian entities in regards to documenting which event is a cold weather event and how to differentiate these events from other outages.	
Likes 0	
Dislikes 0	
Response	
Thank you for your constructive comments. Outages or derates, if they occur, should be reviewed in any case to understand the cause of the event.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	
See EEI Comments	
Likes 0	

Dislikes 0	

Response
Thank you for your comments. Please see responses to EEI comments.

Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	No
Document Name	

Comment
As revised, R6 no longer specifies when the Corrective Acton Plan must be developed following a Cold Weather Reliability Event but only states when the corrective actions must be implemented. The standard should be revised to clarify if there is a deadline to develop the CAP. Any repair or modification that can reasonably be completed before December 1st should be completed, however any repair or modification that needs an outage or if qualified materials and people are not available CAP completion may have to wait until the next planned outage. Planned outages are scheduled to maintain reliability. Adding unplanned outages either postpones scheduled outages or forces outages into periods of time when demand is high therefore reducing the reliability to satisfy load requirements. The expertise for making decisions regarding the timing repairs is best left with the GOs, GOPs, and BAs rather than require approval from the CEA for an extension. Furthermore, if the CEA does not approve an extension request the timeframe to complete the corrective actions would be further reduced to a potentially unreasonable duration.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. Upon review and edits by the Standards Committee, the timeframe to develop the CAP was set to match completion of the CAP for compliance clarity. The FERC Order required NERC pre-approval of any Corrective Action Plan extension request. Note that if a GO proposes an extension to a Corrective Action Plan, efforts to complete the Corrective Action Plan should not stop during the review process.

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer	No
Document Name	
Comment	
As written, the requirement implies that the CAP must be developed while the unit is offline/derated and experiencing the GCWRE. This should be re-written to say "after experiencing a Generator Cold Weather Reliability Event". *The NAGF notes that footnote 10 needs clarity to state that, by adding the event to an already existing CAP, this does not require the creation of a new declaration. As currently structured, it appears that a request for a declaration would need to be made again, which does not address the obligation to complete annual "blade icing and snow-covered solar panel" declarations for many generators.*	
Likes 1	Jennie Wike, N/A, Wike Jennie
Dislikes 0	
Response	
Thank you for your comments. The DT addressed the tense of Requirement R6 and made edits regarding Generator Cold Weather Constraints. The Drafting Team and Standards Committee also have edited R8 to include part 8.4 for recurring GCWREs of the same cause.	
Daniel Gacek - Exelon - 1, Group Name Exelon	
Answer	No
Document Name	
Comment	
Exelon supports the comments submitted by the EEI	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	

Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3,5 - WECC	
Answer	No
Document Name	
Comment	
PNM agrees with the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	

Avista does not object to the proposed shortened deadlines except for the language in Requirement R6, subpart 6.1.6. We understand 6.1.6 to mean that a GO is to complete freeze protection CAPs on similar equipment vulnerabilities within 24 months, however, we disagree that this is what the Commission directed in Paragraph 68 of the order. What they directed was that corrective actions needed to be taken on "similar equipment on all of its fleet within 24 months of becoming **aware of the freeze issue**." In other words, the clock should start after the GO has confirmed similar vulnerabilities on similar equipment on other generating resources. To address this issue, Avista suggests adding the following clarifying language to 6.1.6 as suggested below in boldface:

6.1.6. A review of applicability **to of** similar **freeze protection** equipment **installed on similar generating units within 12 calendar months of the of the Generator Cold Weather Reliability event** by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of **confirming a generating unit has similar equipment vulnerabilities**;

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT and Standards Committee reviewed the FERC Order and determined there would be ambiguity introduced in determining and documenting when an entity becomes “aware of the freeze issue”. Further review and editing added provisions for longer implementation on similar units in a fleet based on the timeframe for development of the CAP.	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI), Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF), and the North American Generator Forum (NAGF) on question 2	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to those organization’s comments.	
Chantal Mazza - Chantal Mazza On Behalf of: Junji Yamaguchi, Hydro-Quebec (HQ), 1, 5; Nicolas Turcotte, Hydro-Quebec (HQ), 1, 5; - Chantal Mazza	
Answer	No
Document Name	
Comment	
We support NB Power's comment:	

Requirement R6 assumes that Generator Cold Weather Reliability Events are identified based on their definition, but there is a weakness in the definition of Generator Cold Weather Reliability Event that may make it unsuitable for auditing in its present form. The issue stems from the fact that a Generator Cold Weather Reliability Event is defined in terms of "apparent cause":

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage

Thus the definition of Generator Cold Weather Reliability Events is based on apparent causes(s) and Apparent Cause Analysis (ACA).

Referring to *Cause Analysis Methods for NERC, Regional Entities, and Registered Entities – September 2011*, Section 3.4, *Apparent Cause Analysis (quoting Revision 2, dated September 20, 2011 in the version history table)*:

An apparent cause is defined as a determination based on the evaluator's judgment and experience, and where reasonable effort is made to determine WHY the problem occurred. ACA seeks to determine why the problem occurred based on reasonable effort and the investigator's judgment and experience (the investigator is often a subject matter expert.) The emphasis of an ACA is primarily to correct a particular event or problem without a special effort to identify the underlying system or process problems that may have contributed to the problem. Performing an ACA should not prevent the identification and correction of these underlying contributors if they can be discovered and addressed easily. Several tools can be used to accomplish an ACA. One of the simplest and most effective tools is the "why staircase."

NOTE: ACA is not industry standard for system disturbances or major events and is not referenced in the Department of Energy (DOE) Guidelines for Root Cause Analysis. A proper corrective action plan cannot be determined based on apparent causes. To establish proper

corrective action plans to prevent reoccurrence, the root causes of the event must be determined. By only looking at apparent causes, the underlying root cause may be overlooked allowing a reoccurrence of the deficiency leading to the event.

Thus, according to NERC's guidelines, an apparent cause is based on the evaluator's judgment and experience, and is not suitable for the determination of a proper corrective action plans. Quoting NERC's guidance, "to establish proper corrective action plans to prevent reoccurrence, the root causes of the event must be determined. By only looking at apparent causes, the underlying root cause may be overlooked, allowing a reoccurrence of the deficiency leading to the event."

In order to determine proper corrective action plans, a proper root cause analysis must be completed; however, undertaking proper root cause analysis requires time, planning, and resources. Moreover, northern and Canadian entities operate in sub-freezing temperatures for substantial parts of each year. Many generator outages, derates, and startup failures occur in sub-freezing temperatures for reasons completely unrelated to "freezing of equipment" or "freezing precipitation." To require that all outages, derates, and startup failures must be investigated to a level to convince an auditor that there is no possible link to freezing weather outside, and thus is not a Generator Cold Weather Reliability Event would impose a disproportionate burden on northern and Canadian entities, many of which have extensive experience operating reliability in sub-freezing temperatures. Exposing northern and Canadian entities to an audit in which their identification of "apparent causes" based on "judgement and experience" is called into question after the fact by an auditor who may not have the background or contextual information about the equipment and may not have had extensive experience with regional weather patterns is likely to lead to inconsistent audit outcomes and disproportionate compliance burden that will do little or nothing to improve system reliability.

The process of selecting generator outages, derates, and startup failures for investigations that would be worthwhile to investigate for possible identification as Generator Cold Weather Reliability Events will necessarily be different from region to region due to regional variations in weather and climate, generating station design, operating experience, and even language (e.g., what Americans call 'sleet' is referred to as 'ice pellets' in Canada). Thus, it is suggested to split the implicit requirement to investigate generator forced outages and derates and startup failures out of Requirement R6 and write a new requirement (here styled R10), something like:

R10. Each Generator Owner of generating units with Extreme Cold Weather Temperatures at or below 32°F/0°C and that self-commit or are required to operate at or below 32°F/0°C shall implement a documented process to identify, investigate, and analyze root causes for the subset of generator forced outages, forced derates, and startup failures that is likely to lead to the identification of Generator Cold Weather Reliability Events. Such a process shall include:

Criteria for selecting candidate generator forced outages, forced derates, and startup failures to be investigated,

A requirement that at least one [or some minimum number] forced outage, forced derate, or startup failure occurring at temperatures at or below 32°F/0°C minimum number be selected for investigation each year unless no such events occur, *A systematic methodology for investigating, analyzing the root causes of, and developing Corrective Action Plans for selected forced outages, forced derates, and startup failures, and* {C}· *Criteria for determining if a generator forced outage, forced derate, or startup failure is in fact a Generator Cold Weather Reliability Event.* With the addition of a documented process to identify Generator Cold Weather Reliability Events, Requirement R6 could be rewritten to begin: *R6. Each Generator Owner shall, when experiencing a Generator Cold Weather Reliability Event identified pursuant to Requirement R10, develop and implement a Corrective Action Plan(s) to address the identified root causes as follows…* The application of a documented, systematic methodology to select, analyze root causes for, and develop Corrective Action Plans for Generator Cold Weather Reliability Events would lead to more consistent audit outcomes by removing auditor judgment from the evaluation of causal analysis and better reliability outcomes through the completion of properly established Corrective Action Plan(s) based on systematic root cause analysis.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. Please see responses to NB Power comments.

Nikki Carson-Marquis - Nikki Carson-Marquis On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Nikki Carson-Marquis	
Answer	No
Document Name	
Comment	

Minnkota Power Cooperative supports comments made by the MRO NSRF and ACES. Addressing these concerns would change Minnkota's vote to a "Yes" vote.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to those organization's comments.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
AES US Renewables does not support the language as proposed in part 6.2. For example, we own and operate wind farms in several regions. Although we may utilize similar equipment model across the regions, the weather conditions & the ECWTs faced by each wind farm are different. Therefore, we suggest the following change to the language in part 6.2: The Generator Owner shall conduct a review of the applicability of the corrective actions from the Corrective Action Plan developed under Part 6.1 to freeze protection measures on similar equipment at other generating unit(s) owned by the Generator Owner **that have been identified as having similar vulnerabilities and ECWT** and, if corrective actions are applicable, develop or update an existing Corrective Action Plan no later than 12 calendar months following the Generator Cold Weather Reliability Event to address the other unit(s). We also suggest similar changes to language in part 6.3.5.2. Additionally, we want to note that the FERC Order language in paragraph 68 that directed NERC to modify Requirement R7 of EOP-012-2 to ensure corrective actions are applied to "similar equipment on all of its fleet within 24 months of becoming aware of the freeze issues". Therefore, part 6.3.5.2 should account for the 12 calendar months	

provided to GOs to conduct their part 6.2 review before the 24 calendar months begin, not 24 months after the Generator Cold Weather Reliability Event: For other generating unit(s), owned by the Generator Owner, **which have been identified through a 6.2 review that they have similar vulnerabilities and ECWT to another generating unit, owned by the Generator Owner, that experienced a** Generator Cold Weather Reliability Event **shall complete their corrective action** within 24 calendar months **of the completion of their 6.2 review**.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team and Standards Committee believe the existing language is appropriate for the first of your proposals, but upon review of section 6.3.5.2, further edits have been made to offer additional time.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	
Comment	
NV Energy would recommend the following grammatical modifications: 6.1 The Generator Owner shall develop a Corrective Action Plan for the generating unit that has experienced experiencing a Generator Cold Weather Reliability Event. 6.3.5.1. For the generating unit that has experienced experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.	

Additionally, NV Energy would recommend that the following modifications be made to 6.3.5.2 to account for the time it may take entities to perform the assessments necessary to determine if additional units have similar vulnerabilities. 6.3.5.2. For other generating unit(s) owned by the Generator Owner, within 24 calendar months of completion of the review required in section 6.2. The intent is so that after you conduct a review of all equipment to determine if similar vulnerabilities exist (within 12 months of the initial GCWRE as per 6.2), you will then have 24 months to address the similar vulnerabilities across the fleet.	
Likes 0	
Dislikes 0	
Response	
Thank you for your constructive comments. The Drafting Team and Standards Committee reviewed and edited these sections in a manner similar to your suggestions.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	
MRO NSRF would recommend the following grammatical modifications: **6.1** The Generator Owner shall develop a Corrective Action Plan for the generating unit that **has experienced** a Generator Cold Weather Reliability Event. **6.3.5.1.** For the generating unit that **has experienced** the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.	

Addititionally, MRO NSRF would recommend that the following modifications be made to 6.3.5.2 to account for the time it may take entities to perform the assessments necessary to determine if additional units have similar vulnerabilities. **6.3.5.2.** For other generating unit(s) owned by the Generator Owner, within 24 calendar months of completion of the review required in section 6.2. The intent is so that after you conduct a review of all equipment to determine if similar vulnerabilities exist (within 12 months of the initial GCWRE as per 6.2), you will then have 24 months to address the similar vulnerabilities across the fleet.	
Likes 0	
Dislikes 0	
Response	
Thank you for your constructive comments. The Drafting Team and Standards Committee reviewed and edited these sections in a manner similar to your suggestions.	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	
Answer	No
Document Name	
Comment	
MEC supports EEI and MRO NSRF comments. MEC would cast an affirmative ballot if NAGF comments for Q1, and EEI comments for Questions 2 and 3 are adopted by the SDT.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to those organization's comments.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No

Document Name	
Comment	
Minnesota Power feels that section 6.1 needs to be clarified to include a required timeline for the CAP.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The Drafting Team and Standards Committee have included a requirement for development of the CAP that aligns with the completion date for compliance clarity.	
Richard Vendetti - NextEra Energy - 5	
Answer	No
Document Name	
Comment	
NextEra supports the comments provided from EEI below: As stated in our previous comments, we do not support the language contained in subpart 6.3.5.2, which we believe does not align with requirements associated with subpart 6.2, or paragraph 68 of the June FERC Order that directed NERC to modify Requirement R7 of EOP-012-2 to ensure corrective actions are applied to "similar equipment on all of its fleet within 24 months of **becoming aware of the freeze issues** (*emphasis added*)". We note that the Commission rightly suggested that corrective actions should be completed on other generating units that utilize similar equipment associated with a Generator Cold Weather Reliability Event within 24 months **after becoming aware** of the use of similar equipment on other generating units within their fleet. We further note that GOs are afforded 12 months to assess and determine which of their other generators have similar equipment that share similar risks. Therefore, subpart 6.3.5.2 should account for the 12 months provided to GOs to conduct their 6.2 review before the 24 months begin, not 24 months after the Generator Cold Weather Reliability Event. To address this concern, we offer the following edits in boldface below:	

6.5.5.2. For other generating unit(s), owned by **the a** Generator Owner, **which have been identified through a 6.2 review that they have similar vulnerabilities to another generating unit, owned by the Generator Owner, that experienced a** Generator Cold Weather Reliability Event **shall complete their corrective action** within 24 **of the completion of their 6.2 review**.

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to the EEI comments.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	No
Document Name	
Comment	
AEPC signed on to ACES comments. Please see ACES comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to the ACES comments.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	

WEC Energy Group supports the comments of the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to MRO NSRF comments.	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation agrees with the NAGF in that as written the Corrective Action Plan (CAP) must be developed while the generator unit is offline/derated and experiencing the GCWRE. As suggested, could be re-written to say "after experiencing a Generator Cold Weather Reliability Event". Footnote 10 also need to be clarified. Black Hills Corporation continues to support EEI's comments that subpart 6.3.5.2. does not align with requirements associated with 6.2. or paragraph 68 of the June FERC Order.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to those organization's comments.	
Andrew Smith - APS - Arizona Public Service Co. - 5	
Answer	No
Document Name	
Comment	

AZPS agrees with comments submitted by EEI on behalf of its members that the 24 calendar month timeline for completion of corrective actions should begin upon completion of the 6.2 review of similar equipment.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to the EEI comments.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	No
Document Name	
Comment	
Tri-State Supports the MRO NSRF Comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to MRO NSRF comments.	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	No
Document Name	
Comment	
PGAE supports the NAGF position regarding updating the drafted language for the CAP to be developed after experiencing the event.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments. Please see response to NAGF comments.	
Becky Burden - Public Utility District No. 1 of Snohomish County - 5	
Answer	No
Document Name	
Comment	
6.3.5.1 timetable scheme seems arbitrary, requesting simplification to be a time frame alone.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	
Comment	
Vistra agrees with comments made on behalf of EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to the EEI comments.	
Jeremy Lawson - Northern California Power Agency - 3,4,5,6	

Answer	No
Document Name	
Comment	
See Marty Hostler comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to Marty Hostler comments.	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	No
Document Name	
Comment	

Requirement R6 assumes that Generator Cold Weather Reliability Events are identified based on their definition, but there is a weakness in the definition of Generator Cold Weather Reliability Event that may make it unsuitable for auditing in its present form. The issue stems from the fact that a Generator Cold Weather Reliability Event is defined in terms of "apparent cause":

Generator Cold Weather Reliability Event *– One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:*

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage

Thus, the definition of Generator Cold Weather Reliability Events is based on apparent causes(s) and Apparent Cause Analysis (ACA).

Referring to *Cause Analysis Methods for NERC, Regional Entities, and Registered Entities – September 2011*, Section 3.4, *Apparent Cause Analysis (quoting Revision 2, dated September 20, 2011, in the version history table)*:

An apparent cause is defined as a determination based on the evaluator's judgment and experience, and where reasonable effort is made to determine WHY the problem occurred. ACA seeks to determine why the problem occurred based on reasonable effort and the investigator's judgment and experience (the investigator is often a subject matter expert.) The emphasis of an ACA is primarily to correct a particular event or problem without a special effort to identify the underlying system or process problems that may have contributed to the problem. Performing an ACA should not prevent the identification and correction of these underlying contributors if they can be discovered and addressed easily. Several tools can be used to accomplish an ACA. One of the simplest and most effective tools is the "why staircase."

NOTE: ACA is not industry standard for system disturbances or major events and is not referenced in the Department of Energy (DOE) Guidelines for Root Cause Analysis. A proper corrective action plan cannot be determined based on apparent causes. To establish proper corrective action plans to prevent reoccurrence, the root causes of the event must be determined. By only looking at apparent causes, the underlying root cause may be overlooked allowing a reoccurrence of the deficiency leading to the event.

Thus, according to NERC's guidelines, an apparent cause is based on the evaluator's judgment and experience and is not suitable for the determination of a proper corrective action plans. Quoting NERC's guidance, "to establish proper corrective action plans to prevent reoccurrence, the root causes of the event must be determined. By only looking at apparent causes, the underlying root cause may be overlooked, allowing a reoccurrence of the deficiency leading to the event."

In order to determine proper corrective action plans, a proper root cause analysis must be completed; however, undertaking proper root cause analysis requires time, planning, and resources. Moreover, northern and Canadian entities operate in sub-freezing temperatures for substantial parts of each year. Many generator outages, derates, and startup failures occur in sub-freezing temperatures for reasons completely unrelated to "freezing of equipment" or "freezing precipitation." To require that all outages, derates, and startup failures must be investigated to a level to convince an auditor that there is no possible link to freezing weather outside, and thus is not a Generator Cold Weather Reliability Event would impose a disproportionate burden on northern and Canadian entities, many of which have extensive experience operating reliability in sub-freezing temperatures. Exposing northern and Canadian entities to an audit in which their identification of "apparent causes" based on "judgement and experience" is called into question after the fact by an auditor who may not have the background or contextual information about the equipment and may not have had extensive experience with regional weather patterns is likely to lead to inconsistent audit outcomes and disproportionate compliance burden that will do little or nothing to improve system reliability.

The process of selecting generator outages, derates, and startup failures for investigations that would be worthwhile to investigate for possible identification as Generator Cold Weather Reliability Events will necessarily be different from region to region due to regional variations in weather and climate, generating station design, operating experience, and even language (e.g., what Americans call 'sleet' is referred to as 'ice pellets' in Canada). Thus, it is suggested to split the implicit requirement to investigate generator forced outages and derates and startup failures out of Requirement R6 and write a new requirement (here styled R10), something like:

R10. Each Generator Owner of generating units with Extreme Cold Weather Temperatures at or below 32°F/0°C and that self-commit or are required to operate at or below 32°F/0°C shall implement a documented process to identify, investigate, and analyze root causes for the subset of generator forced outages, forced derates, and startup failures that is likely to lead to the identification of Generator Cold Weather Reliability Events. Such a process shall include:

- *Criteria for selecting candidate generator forced outages, forced derates, and startup failures to be investigated,*
- *A requirement that at least one [or some minimum number] forced outage, forced derate, or startup failure occurring at temperatures at or below 32°F/0°C minimum number be selected for investigation each year unless no such events occur,*
- *A systematic methodology for investigating, analyzing the root causes of, and developing Corrective Action Plans for selected forced outages, forced derates, and startup failures, and*
- *Criteria for determining if a generator forced outage, forced derate, or startup failure is in fact a Generator Cold Weather Reliability Event.*

With the addition of a documented process to identify Generator Cold Weather Reliability Events, Requirement R6 could be rewritten to begin:

R6. Each Generator Owner shall, when experiencing a Generator Cold Weather Reliability Event identified pursuant to Requirement R10, develop and implement a Corrective Action Plan(s) to address the identified root causes as follows…

The application of a documented, systematic methodology to select, analyze root causes for, and develop Corrective Action Plans for Generator Cold Weather Reliability Events would lead to more consistent audit outcomes by removing auditor judgment from the evaluation of causal analysis and better reliability outcomes through the completion of properly established Corrective Action Plan(s) based on systematic root cause analysis.

Likes 0	
Dislikes 0	
Response	

Thank you for your constructive comments. Project 2021-07 DT utilized "apparent" in the definition as it exists today. An example of comments from Project 2021-07 includes "*Additionally, the SDT is using the definition of apparent as defined in the dictionary as "clear or manifest to the understanding*". A unit suffering a Generator Cold Weather Reliability Event will do an analysis of the event and act accordingly including actions associated with an apparent cause.	
Erin Wilson - NB Power Corporation - New Brunswick Power Transmission Corporation - 5	
Answer	No
Document Name	
Comment	

Requirement R6 assumes that Generator Cold Weather Reliability Events are identified based on their definition, but there is a weakness in the definition of Generator Cold Weather Reliability Event that may make it unsuitable for auditing in its present form. The issue stems from the fact that a Generator Cold Weather Reliability Event is defined in terms of "apparent cause":

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(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage

Thus, the definition of Generator Cold Weather Reliability Events is based on apparent causes(s) and Apparent Cause Analysis (ACA).

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regional weather patterns is likely to lead to inconsistent audit outcomes and disproportionate compliance burden that will do little or nothing to improve system reliability.

The process of selecting generator outages, derates, and startup failures for investigations that would be worthwhile to investigate for possible identification as Generator Cold Weather Reliability Events will necessarily be different from region to region due to regional variations in weather and climate, generating station design, operating experience, and even language (e.g., what Americans call 'sleet' is referred to as 'ice pellets' in Canada). Thus, it is suggested to split the implicit requirement to investigate generator forced outages and derates and startup failures out of Requirement R6 and write a new requirement (here styled R10), something like:

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{C}· *Criteria for selecting candidate generator forced outages, forced derates, and startup failures to be investigated,*

{C}· *A requirement that at least one [or some minimum number] forced outage, forced derate, or startup failure occurring at temperatures at or below 32°F/0°C minimum number be selected for investigation each year unless no such events occur,*

{C}· *A systematic methodology for investigating, analyzing the root causes of, and developing Corrective Action Plans for selected forced outages, forced derates, and startup failures, and*

{C}· *Criteria for determining if a generator forced outage, forced derate, or startup failure is in fact a Generator Cold Weather Reliability Event.*

With the addition of a documented process to identify Generator Cold Weather Reliability Events, Requirement R6 could be rewritten to begin:

R6. Each Generator Owner shall, when experiencing a Generator Cold Weather Reliability Event identified pursuant to Requirement R10, develop and implement a Corrective Action Plan(s) to address the identified root causes as follows… The application of a documented, systematic methodology to select, analyze root causes for, and develop Corrective Action Plans for Generator Cold Weather Reliability Events would lead to more consistent audit outcomes by removing auditor judgment from the evaluation of causal analysis and better reliability outcomes through the completion of properly established Corrective Action Plan(s) based on systematic root cause analysis.

Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	

Response
Thank you for your constructive comments. Project 2021-07 DT utilized “apparent” in the definition as it exists today. An example of comments from Project 2021-07 includes “Additionally, the SDT is using the definition of apparent as defined in the dictionary as “clear or manifest to the understanding”. A unit suffering a Generator Cold Weather Reliability Event will do an analysis of the event and act accordingly including actions associated with an apparent cause.

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	

Comment
As stated in our previous comments, we do not support the language contained in subpart 6.3.5.2, which we believe does not align with requirements associated with subpart 6.2, or paragraph 68 of the June FERC Order that directed NERC to modify Requirement R7 of EOP-012-2 to ensure corrective actions are applied to “similar equipment on all of its fleet within 24 months of **becoming aware of the freeze issues** (*emphasis added*)”. We note that the Commission rightly suggested that corrective actions should be completed on other generating units that utilize similar equipment associated with a Generator Cold Weather Reliability Event within 24 months **after becoming aware** of the use of similar equipment on other generating units within their fleet. We further note that GOs are afforded 12 months to assess and determine which of their other generators have similar equipment that share similar risks. Therefore, subpart

6.3.5.2 should account for the 12 months provided to GOs to conduct their 6.2 review before the 24 months begin, not 24 months after the Generator Cold Weather Reliability Event. To address this concern, we offer the following edits in boldface below: **6.5.5.2.** For other generating unit(s), owned by **a** Generator Owner, **which have been identified through a 6.2 review that they have similar vulnerabilities to another generating unit, owned by the Generator Owner, that experienced a** Generator Cold Weather Reliability Event **shall complete their corrective action** within 24 **of the completion of their 6.2 review**.	
Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team and Standards Committee reviewed the language and have made edits that provide additional time in a manner similar to your proposal.	
Mason Jones - Mason Jones On Behalf of: Michael Whitney, Northern California Power Agency, 4, 6, 3, 5; - Mason Jones	
Answer	No
Document Name	
Comment	
This, also creates an unfair competitive advantage. Forcing some entities pay for the development of correction action plans requiring them to make modifications to operate at a temperature they were designed, built, or financed to operate at. This shows no regard to affordability, competitiveness, or ensured cost recovery for providing a higher level of reliability above and beyond what other generators are required to provide.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team and Standards Committee reviewed and edited language to respond to direction from FERC.	
Michael Whitney - Northern California Power Agency - 3, Group Name NCPA	

Answer	No
Document Name	
Comment	
See Marty Hostler comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to Marty Hostler comments.	
Marty Hostler - Northern California Power Agency - 4	
Answer	No
Document Name	
Comment	
NO. This, also creates an unfair competitive advantage. Forcing some entities pay for the development of correction action plans that require them to make modifications to operate at temperatures they were not designed, built, or financed to operate at creates an unfair competitive disadvantage for some and advantage for others. This shows no regard to affordability, competitiveness, or ensured cost recovery for providing a higher level of reliability above and beyond what other generators are required to provide.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team and Standards Committee reviewed and edited language to respond to direction from FERC.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	No

Document Name	
Comment	
While the proposed language does respond to the FERC Order Paragraph 8, the forced use of the CAP Extension Process to address those larger or complicated CAP implementations that may require more than 12 months seems to add excessive administration efforts for entities. Lead times for materials or parts can exceed 18 months, language to allow CAP actions affected by long lead times to exceed past the "first day of the first December" would allow entities to focus more on implementation of the CAPs rather than administering extension of CAPs. Providing requirement language that has specific "large and complex" considerations could allow entities needed flexibility to develop accurate CAPs initially and not be forced into the extension process. The FERC Order Paragraph 68 does seem to indicate allowance for up to 48 months on CAP(s) if such conditions exist and the CAP takes a staged approach.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team and Standards Committee reviewed the language and have made edits that provide additional time.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	No
Document Name	
Comment	
While the proposed language does respond to the FERC Order Paragraph 8, the forced use of the CAP Extension Process to address those larger or complicated CAP implementations that may require more than 12 months seems to add excessive administration efforts for entities. Lead times for materials or parts can exceed 18 months, language to allow CAP actions affected by long lead times to exceed past the "first day of the first December" would allow entities to focus more on implementation of the CAPs rather than administering extension of CAPs. Providing requirement language that has specific "large and complex" considerations could allow entities needed flexibility to develop accurate CAPs initially and not be forced into the extension process. The FERC Order Paragraph 68 does seem to indicate allowance for up to 48 months on CAP(s) if such conditions exist and the CAP takes a staged approach.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The Drafting Team and Standards Committee reviewed the language and have made edits that provide additional time.	
Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
Talen supports the comments of the NAGF on this issue, and adds that the, “first day of the first December following the Generator Cold Weather Reliability Event,” deadline in R6.3.5.1 is unrealistic for completing an analysis, identifying a root cause, weighing corrective action alternatives, preparing a specification, collecting competing bids, awarding a contract, designing equipment, procuring materials and installing retrofits (without interfering with the summer peak season). The time frame allowed should be two years, the same as in R6.3.5.2. also, change the 45 days deadline in the 2nd bullet point of R8.1 to 90 days.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to NAGF comments. The Drafting Team and Standards Committee reviewed language and believe it is responsive to the FERC Order.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	No
Document Name	
Comment	

Req 6.2 allows 12 months for the development of a CAP plan. If CAP plan development actually takes 12 months, the entity would only have the remaining 12 months if the 24 calendar months from the Generator Cold Weather reliability event to implement the CAP plan across the rest of the fleet. This could prove problematic based on the nature of the event and remediation required. Does NERC anticipate that the Generator Cold Weather Constraint process will address this concern?

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The Drafting Team and Standards Committee reviewed the language and have made edits that provide additional time.

Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	

Comment
Reclamation does not agree. Shortening time frames to 24 months does not alleviate the burden of lack of material, contracting resources, outages or other schedulable items.

Likes 0	
Dislikes 0	

Response
Thank you for your comments.

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	

Comment

The time required of the December 1st date is too restrictive for most mod projects. Duke Energy does not support the language used in requirement R6.3.5.1 which requires the resolution of all winter event corrective actions by December 1st of the following year. This interval is too restrictive to allow for evaluation and correction on many freeze protection repairs or for the installation of new freeze protection measures. The inadequacies of this time interval are compounded when the effects of a major winter storm are considered. Large storms, like Elliott or a Polar Vortex, impact multiple units across multiple utilities. It would be difficult for a GO to address multiple events in this timeframe with available vendor support, and competing vendor availability with other utilities will only exacerbate this situation. Maintaining R6.3.5.1 as proposed will also result in higher levels of extension approvals for CEAs to process. Duke Energy recommends the requirement be modified to a period of 24 calendar months.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The Drafting Team and Standards Committee reviewed language and believe it is responsive to the FERC Order.

Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	

Comment
The SRC recommends that Requirement R6, Part 6.4 be revised to include a timeline for submitting extension requests (for example, 60 days before the first deadline that would be impacted by the extension request). This would help reduce last-minute extension requests and ensure the CEA has adequate time to review and process extension requests.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. Note the NERC process has timelines for submitting the extension requests. The DT discussed the possibility of timelines within the Standard but agreed with the flexibility provided in the NERC process.

Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy believes compliance with R7 should be reasonably achievable. Please see the additional comments regarding deadline extensions.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC	
Answer	Yes
Document Name	
Comment	
WECC appreciates the efforts in clarifying this Requirement. The DT should consider adding additional language to clarify the following: If a unit has a Generator Cold Weather Reliability event and creates a CAP then subsequentially declares a Generator Cold Weather Constraint—what happens if another GCWRE occurs for the same cause (e.g., blade icing)? Standard language tends to possibly be interpreted as requiring a new CAP and new declaration. A footnote exists for updating a CAP and the NERC process covers updating Generator Cold Weather Constraints for "other" units. Suggest the following: 8.4 If a validated declared Generator Cold Weather Constraint exists for a generating unit(s), a Generator Owner that experiences a Generator Cold Weather Reliability Event for the generating unit(s) shall review the cause(s) of the Generator Cold Weather Reliability Event. If the cause(s) are the same for the existing validated Generator Cold Weather Constraint, no Corrective Action Plan or subsequent re-declaration of the Generator Cold Weather Constraint is required.	

M8 Language: Each Generator Owner shall have dated evidence that demonstrates it performed the actions in accordance with Requirement R8. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): a copy of the Generator Cold Weather Constraint declaration, evidence the declaration was provided to the Compliance Enforcement Authority in accordance with the specified timeframe, records that document update(s) to the operating limitations, as needed, and updated Corrective Action Plan(s), if applicable, and documentation of Generator Cold Weather Reliability Event cause reviews.	
Likes 0	
Dislikes 0	
Response	
Thank you for your constructive comments. The DT and Standards Committee have reviewed and edited language similar to your suggestion.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tony Hua - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Michael Dillard - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Lovita Griffin - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	

Texas RE is concerned that there is the potential for confusion regarding when a Corrective Action Plan (CAP) should be developed and implemented. The verbiage of Requirement R6 could potentially be read to imply that a CAP must be developed concurrently with a "Generator Cold Weather Reliability Event" (as indicated by the language "when experiencing a Generator Cold Weather Reliability Event"). Texas RE recommends clarifying that CAP development and implementation can occur *following* the Generator Cold Weather Reliability Event. The proposed measures are clear that CAPs should be developed **following** a Generator Cold Weather Event. Texas RE recommends similar language be included in the requirement language itself to avoid any possible confusion.	
Likes 0	
Dislikes 0	
Response	
Thank you for your constructive comments. The DT addressed the tense in Requirement R6.	
Darcy O'Connell - California ISO - 2	
Answer	
Document Name	
Comment	
CAISO agrees with comments submitted by the ISO/RTO Counsel (IRC) Standards Review Committee	
Likes 0	
Dislikes 0	
Response	
Please see responses to IRC comments.	

3. In paragraph 72 of the June 2024 Order, FERC directed NERC to develop and submit modifications to Requirement R7 of Reliability Standard EOP-012-2 to clarify that any Requirement R7 corrective action plans for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date. **The drafting team provided updated language in Requirement R2 to address the issue of units in different stages of design and construction to support meeting this directive. June 29, 2023 was chosen as a date of demarcation, as that was the date the Extreme Cold Weather Temperature was settled upon, after the approval date of February 16, 2023. Do you agree that the industry driven edits to Requirement R2 are responsive to the FERC directives? If you do not agree, please provide your language change suggestions for the drafting team.**

Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
Talen supports the comments of the NAGF on this issue.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to NAGF comments.	
Marty Hostler - Northern California Power Agency - 4	

Answer	No
Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	
N/A	
Michael Whitney - Northern California Power Agency - 3, Group Name NCPA	
Answer	No
Document Name	
Comment	
See Marty Hostler comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. We were not able to identify comments from Marty Holster for Question 3.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	

EEI does not agree with aligning GO compliance for Requirement R2 to the June 29, 2023 date. While we do not dispute that "June 29, 2023, may have been chosen as a date of demarcation" for the settlement of the definition Extreme Cold Weather Temperature, what matters is when the compliance obligations within Requirement R2 became enforceable. EEI notes that EOP-012-2 Enforcement date of EOP-012-2 is June 27, 2024, therefore this should be the date when GOs are held accountable for the R2 Requirement. To hold GOs accountable to requirements prior to the Enforcement Date of a Reliability Standard is unjustified and should be changed.	
Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	
Response	
Thank you for your comments. October 1, 2024 was the effective date of EOP-012-2. GOs, and any other entity, are accountable to the Requirements upon the effective date approved by FERC. There are always efforts done before an effective date and decisions made to ensure an entity is in compliance upon the effective date. By June 29, 2023, the obligations and responsibilities included in EOP-012 were known to GOs and efforts to ensure compliance should have begun to be addressed. Requirement R2 is designed for units that were in developmental stages when these obligations could have and should have been known. Establishing a contractually committed to design criteria date simply offers those potential projects that were further along in their development process to utilize a CAP to get them through their first winter of operation. This approach was considered reasonable to the drafting team and the Standards Committee.	
Jeffrey Streifling - NB Power Corporation – 1	
Answer	No
Document Name	
Comment	
Suggest expanding on footnote 4 and 6 in the Standard explaining the rationale for the June 29, 2023, date (and/or a reference/link to the FERC Order approving the ECWT definition).	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. The drafting team has reviewed the comments and discussed against the SAR work scopes as well as the FERC Directives. The drafting team and/or Standards Committee made some modifications where appropriate.	
Jeremy Lawson - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
See Marty Hostler comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. We were not able to identify comments from Marty Holster for Question 3.	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	
Comment	
Vistra agrees with comments made on behalf of EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	No

Document Name	
Comment	
PGAE supports the NAGF position regarding suggested revisions to Attachment 1 Known Constraints timeline.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to NAGF comments.	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	No
Document Name	
Comment	
Requirement R2 specifies an April 1, 2028 date to complete CAPs for generating units that begin commercial operation on or after October 1, 2027 and which committed to design criteria before the date of the ECWT definition was approved be FERC or other applicable government authority in non-US jurisdictions. The Technical Rationale clarifies that the April 1, 2028 was selected based on the EOP-012-1 adoption timelines in the US, and that a footnote has been added to allow for date adjustments needed for Canadian entities. The posted EOP-012-3 Draft 2 does not appear to include such a footnote. BC Hydro asks that at a minimum, a footnote be added to this effect. Similar to comments submitted on the previous draft, BC Hydro recommends that instead of referencing specific dates in the body of a Requirement, appropriate wording clarifying the compliance enforcement date's determination, such as, in case of Footnote 4 as an example, "date on which the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction" be used instead. The specific date for US enforcement could be added in a footnote or other associated documentation, such as compliance implementation or CMEP guidance documents. This will help with the process of standard adoption in non-FERC regulated jurisdictions, such as Canada.	
Likes 0	
Dislikes 0	

Response	
Thank you for the constructive comments. During the last webinar a meeting was suggested between Canadian entities and NERC legal to discuss the issues with dates within a Standard. Please watch for further opportunities to discuss these concerns.	
Donna Wood - Tri-State G and T Association, Inc. – 1	
Answer	No
Document Name	
Comment	
Tri-State Supports the MRO NSRF Comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to MRO NSRF comments.	
Andrew Smith - APS - Arizona Public Service Co. – 5	
Answer	No
Document Name	
Comment	
AZPS agrees with comments submitted by EEI on behalf of its members that the date of demarcation should be the enforcement date of the Standard and not tied to the date for the ECWT definition.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	

Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Black Hills Corporation does not agree with the updated language for Requirement R2; we do not support any imposition of any requirement within a NERC Reliability Standard that intends to impose legal obligations retroactively.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. GOs, and any other entity, are accountable to the Requirements upon the effective date approved by FERC. There are always efforts done before an effective date and decisions made to ensure an entity is in compliance upon the effective date. By June 29, 2023, the obligations and responsibilities included in EOP-012 were known to GOs and efforts to ensure compliance should have begun to be addressed. Requirement R2 is designed for units that were in developmental stages when these obligations could have and should have been known. Establishing a contractually committed to design criteria date simply offers those potential projects that were further along in their development process to utilize a CAP to get them through their first winter of operation. This approach was considered reasonable to the drafting team and the Standards Committee..	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the comments of the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. Please see responses to MRO NSRF comments.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	No
Document Name	
Comment	
AEPC signed on to ACES comments. Please see ACES comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to ACES comments.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
Minnesota Power believes that the R2.2 contractually committed to design criteria date should be the effective date of the standard (October 1, 2024).	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	

Answer	No
Document Name	
Comment	
MEC supports EEI and MRO NSRF comments. MEC would cast an affirmative ballot if NAGF comments for Q1, and EEI comments for Questions 2 and 3 are adopted by the SDT.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to those organization's comments.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	
MRO NSRF believes that this should be the date that a standard became effective which brought the term ECWT became part of a Reliability Standard that is Subject to Enforcement, which occurred when EOP-012-2 became effective on 10/1/2024 for US Entities.	
Likes 0	
Dislikes 0	
Response	
Thank you for the constructive comment.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	

Comment	
NV Energy believes that this should be the date that a standard became effective which brought the term ECWT became part of a Reliability Standard that is Subject to Enforcement, which occurred when EOP-012-2 became effective on 10/1/2024 for US Entities.	
Likes 0	
Dislikes 0	
Response	
Thank you for the constructive comment.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
While AES US Renewables appreciates the intent of the February 16, 2023 date, we do not agree that compliance date should be aligned to a glossary term, rather it should be aligned to the implementation plan of EOP-012-1 as that is usually what registered entities are held accountable to. In the case of EOP-012-1's implementation plan, the effective date is supposed to be 10/1/2024. Therefore, we request that the drafting team revise the June 29, 2023 date to October 1, 2024.	
Likes 0	
Dislikes 0	
Response	
Thank you for the constructive comment.	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	No
Document Name	

Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) on question 3	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to those organization's comments.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	
Although the changes made to Requirements R6 and R7 comply with the intent of the FERC Order, there needs to be more detail defining the timelines associated with the CEA reviews and determinations. We further ask that consideration be given to including an appeals process for a denial of a Corrective Action Plan extension. While we understand that NERC is not bound to Requirements contained in Reliability Standards, determinations that represent the denial of a CAP extension may be caused by a misunderstanding or missing information that can be resolved through an appeals process. Avista additionally questions the value of Footnotes 11 and 12, which state that extension requests will be evaluated in accordance with NERC processes and extension requests for non US-Registered entities should be implemented in a manner consistent with the responsible government authority. Given NERC or applicable governmental authorities or agencies in non-US jurisdiction are not subject to Requirements within NERC Reliability Standards, these footnotes have no utility and should be removed.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments. The drafting team has reviewed the comments and discussed against the SAR work scopes as well as the FERC Directives. The drafting team made some modifications where appropriate.	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3,5 - WECC	
Answer	No
Document Name	
Comment	
PNM agrees with comments of EEI	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Daniel Gacek - Exelon - 1, Group Name Exelon	
Answer	No
Document Name	
Comment	
Exelon supports the comments submitted by the EEI	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
The NAGF does not agree with the updated language for Requirement R2. The proposed NAGF modifications to Attachment 1 identified under Question 1 need to be incorporated into Requirement R2 or Attachment 1 to address the NAGF concerns.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. This question was " **Do you agree that the industry driven edits to Requirement R2 are responsive to the FERC directives?"** The industry driven comments were regarding the demarcation timeline for the definition of ECWT and were not addressing the FERC approved October 1 , 2027 date already in effect. Question 1 NAGF comments were directed at extending timelines for turbine tower usage based on current design temperatures which may limit the placement of generating units or increase the utilization of the Generator Cold Weather Constraints for such locations. NAGF mentioned the OEM approach to "new" designs mentioned at the Technical Conference. The DT provided the answer to Question 1 as follows:" At the Technical Conference for EOP-012, OEMs also shared a "Texas" special inverter that had been designed, manufactured, and shipped in less than three years because of the need for reliable operations." FERC expressed urgency in the June 2024 Order because of the nature of extreme cold weather events and the performance of generating units in extreme cold weather events since 2011(and before). The DT and the SC do not support continued extension of timelines that appear opposed to directives in the FERC Order.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	
See EEI Comments	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Manitoba Hydro recommends **all** dates specified in R2 include: In non-US jurisdictions, use the effective date for the EOP-012-3 standard, as the applicability criteria for the Generator Owner first contractual commitment to design criteria, thus avoiding retroactively imposing compliance obligations through new or revised requirements.	
Likes 0	
Dislikes 0	
Response	
Thank you for the constructive comments. During the last webinar a meeting was suggested between Canadian entities and NERC legal to discuss the issues with dates within a Standard. Please watch for further opportunities to discuss these concerns.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	No
Document Name	
Comment	
Southern Company agrees with the recommendations by EEI regarding the enforcement date.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comments. Please see responses to EEI comments.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	No
Document Name	
Comment	

It is the opinion of ACES that the current language of Requirement 2.1 is not responsive to paragraph 72 of the FERC directive. This paragraph does not explicitly require a corrective action plan ("CAP"), merely that, if a CAP is needed, "…it should be completed by the time that such generating units go into commercial operation." In our judgment, a provision within Requirement R2 to develop and implement a CAP prior to beginning commercial operations is reasonable, sensible, and in-line with the industry standard CAP process. We contend that by directing that a CAP must be completed prior to beginning commercial operations, FERC has rendered said CAP process both superfluous and moot for Requirement R2.

In brief, if GOs must implement freeze protection measures on a new generating unit(s) prior to beginning commercial operation, why does it matter which process the GO followed to implement said measures? Therefore, ACES recommends removing the date of demarcation entirely and striking any provisions for a CAP from Requirement R2.

However, if the SDT is unwaveringly committed to including a conditional provision for including a CAP process then, in the opinion of ACES, the date of demarcation for contractual commitments is best defined by the effective date of EOP-012-2. It is our perspective that Implementation Plans are a useful and valuable tool that provide the industry with time to interpret and implement any required compliance actions or activities.

Succinctly stated, it is our opinion that the SDT should **not** break from established precedent by tying the compliance date to the governmental authority approval date in lieu of the effective date of the NERC Standard.

To comply with the FERC directive, ACES recommends using language that is substantially similar to EOP-012-2 as demonstrated below:

R2. Applicable to generating units that begin commercial operation on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below thirty-two (32) degrees Fahrenheit (zero (0) degrees

Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of thirty-two (32) degrees Fahrenheit (zero (0) degrees Celsius), shall: 2.1. Prior to beginning commercial operations, implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (thirty-two (32) km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or 2.2 Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.	
Likes 0	
Dislikes 0	
Response	
Thank you for the constructive comments. Probably need some help from Lauren Perotti here.	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	No
Document Name	
Comment	
Ameren supports EEI's and NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to those organization's comments.	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	No

Document Name	
Comment	
We support EEi's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Kimberly Turco - Constellation - 6	
Answer	No
Document Name	
Comment	
CEG Supports the NAGF response to this question. Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to NAGF comments.	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	No
Document Name	

Comment	
PacifiCorp supports EEI comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	No
Document Name	
Comment	

Request: Revise the second bullet point in Part 2.1 as follows: "Develop, implement, and complete by ***the earlier of*** April 1, 2028, ***or the generating unit's commercial operation date*** a Corrective Action Plan . . . ."

Justification: The SRC believes the updated language in Requirement R2 does not fully respond to FERC's directive. Specifically, FERC's directive in paragraph 72 of the June 2024 Order requires that "any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date." Under Part 2.1 of Requirement R2, a unit is not required to complete its Corrective Action Plan until April 1, 2028, and a unit that enters commercial operations before that date might still have an incomplete Corrective Action Plan, which is not a permissible scenario under FERC's directive. To address this issue, the SRC recommends the following revision to the second bullet point in Part 2.1: "Develop, implement, and complete by ***the earlier of*** April 1, 2028, ***or the generating unit's commercial operation date*** a Corrective Action Plan . . . ."

Footnotes 4 and 6: Additionally, it is not clear which applicable governmental authority approval date footnotes 4 and 6 refer to. The SRC recommends that these footnotes be clarified as follows: " . . . use the date **EOP-012-1 was** approved . . ."

Likes 0	
Dislikes 0	
Response	
Thank you for your constructive comments. The intent of Part 2.1 is to allow commercial operation of new generating units that contractually committed to design criteria by the indicated date during the winter of 2027-2028 as long as they are working on a CAP that will result in full compliance with R2 no later than April 1, 1028. This carefully considered language recognizes the need to balance provisions of the FERC directives with the desire to mitigate narrow winter reserve margins being experienced in many areas.	
Rhonda Jones - Invenergy LLC - 5	
Answer	No
Document Name	
Comment	
The drafting team provided updated language in Requirement R2 to address the issue of units in different stages of design and construction to support meeting this directive. June 29, 2023 was chosen as a date of demarcation, as that was the date the Extreme Cold Weather Temperature was settled upon, after the approval date of February 16, 2023. Do you agree that the industry driven edits to Requirement R2 are responsive to the FERC directives? If you do not agree, please provide your language change suggestions for the drafting team.	
Likes 0	
Dislikes 0	
Response	
N/A	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	

Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC	
Answer	Yes
Document Name	
Comment	
WECC appreciates the efforts to provide a smoother path to reliability for units being considered, under construction, and near commercial operation.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
No additional comments.	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Erin Wilson - NB Power Corporation - New Brunswick Power Transmission Corporation - 5	
Answer	Yes
Document Name	
Comment	
Suggest expanding on footnote 4 and 6 in the Standard explaining the rationale for the June 29, 2023, date (and/or a reference/link to the FERC Order approving the ECWT definition).	
Likes 0	
Dislikes 0	
Response	
Thank you for your constructive comment and support. During the last webinar a meeting was suggested between Canadian entities and NERC legal to discuss the issues with dates within a Standard. Please watch for further opportunities to discuss these concerns.	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Suggest expanding on footnote 4 and 6 in the Standard explaining the rationale for the June 29, 2023 date (and/or a reference/link to the FERC Order approving the ECWT definition).	
Likes 0	
Dislikes 0	

Response	
Thank you for your constructive comment and support.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
Suggest expanding on footnote 4 and 6 in the Standard explaining the rationale for the June 29, 2023, date (and/or a reference/link to the FERC Order approving the ECWT definition).	
Likes 0	
Dislikes 0	
Response	
Thank you for your constructive comment and support.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Lovita Griffin - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
Michael Dillard - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tony Hua - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Becky Burden - Public Utility District No. 1 of Snohomish County - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Nikki Carson-Marquis - Nikki Carson-Marquis On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Nikki Carson-Marquis	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Richard Vendetti - NextEra Energy - 5	
Answer	
Document Name	
Comment	
NextEra supports the comments provided from EEI below: EEI does not agree with aligning GO compliance for Requirement R2 to the June 29, 2023 date. While we do not dispute that "June 29, 2023, may have been chosen as a date of demarcation" for the settlement of the definition Extreme Cold Weather Temperature, what matters is when the compliance obligations within Requirement R2 became enforceable. EEI notes that EOP-012-2 Enforcement date of EOP-012-2 is June 27, 2024, therefore this should be the date when GOs are held accountable for the R2 Requirement. To hold GOs accountable to requirements prior to the Enforcement Date of a Reliability Standard is unjustified and should be changed.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see responses to EEI comments.	
Darcy O'Connell - California ISO - 2	
Answer	

Document Name	
Comment	
CAISO agrees with comments submitted by the ISO/RTO Counsel (IRC) Standards Review Committee	
Likes 0	
Dislikes 0	
Response	
Please see responses to IRC comments.	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	
Document Name	
Comment	
No Comment.	
Likes 0	
Dislikes 0	
Response	
N/A	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	
Document Name	
Comment	
See EEI's comments.	

Likes 0	
Dislikes 0	
Response	
Please see responses to EEI comments.	

4. In paragraph 94 of the June 2024 Order, FERC directs NERC to develop and submit modifications to Requirement R8, Part 8.1 of Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations (than every five years) to verify that the declaration remains valid. **Based on industry feedback, the drafting team created Requirement 9 to require review every 36 calendar months. Do you agree that the revision addresses this directive and provides an effective balance with administrative efforts to ensure Generator Cold Weather Constraints remain valid? If you do not agree, please provide your language change suggestions for the drafting team.**	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	No
Document Name	
Comment	

Constraints determined to be invalid: The SRC recommends that Requirement R9 be revised to specify the Generator Owner would need to implement freeze protection measures or develop a Corrective Action Plan as required by Requirement R7 if a Generator Owner determines that a previously validated Generator Cold Weather Constraint is no longer valid as a result of its periodic review.

As Requirement R9 is currently drafted, it is not clear to the SRC how long a Generator Owner would have to implement new freeze protection measures, develop and implement a Corrective Action Plan under Requirement R7, or take any other actions that may be needed as a result of a constraint no longer being valid.

Knowledge of changed circumstances: Additionally, the SRC recommends that Requirement R9 be revised as follows to require Generator Owners to react to knowledge of changed circumstances outside of the 36-month review cycle, such as any NERC Alerts or other guidance NERC or FERC might issue as part of their oversight of the constraint declaration process and the technological state of freeze protection measures in the industry:

"The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. ***The Generator Owner shall also review each Generator Cold Weather Constraint declaration validated by the CEA upon gaining actual or constructive knowledge of a material change in the circumstances that formed the basis for the Generator Cold Weather Constraint declaration to determine if it remains valid in accordance with Attachment 1.***"

CEA submission: Finally, the SRC recommends that Requirement R9 be revised to require the Generator Owner to submit the results of each constraint review to the CEA. This would provide the CEA additional insight into the overall state and usage of constraints within the industry, and may help the CEA stay informed of the overall pace of changes of freeze protection technology within the industry. It would also help NERC maintain a database of best practices and technological advancements, as recommended in the SRC's response to question 1.

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The drafting team has reviewed the comments and discussed againt the SAR work scopes as well as the FERC Directives. The drafting team made some modifications where appropriate. The DT altered Requirement R8 and Requirement R9. The industry, and the DT, remain divided on the issue of recognizing and addressing substantive changes in the status of Generator Cold Weather Constraints that are off-cycle from the Requirement R9 language.	
Glen Farmer - Avista - Avista Corporation - 1,3,5	
Answer	No
Document Name	
Comment	
We support EEi's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Reviewing the Generator Cold Weather Constraints declaration more frequently than reviewing the Generating Unit’s Cold Weather Preparedness plan (R1 - 5 calendar years) will not improve BES reliability in Manitoba where we seasonally operate near our ECWT for	

extended periods of time. Our generating units must operate reliably every winter season. Reviewing Generator Cold Weather Constraints every 36 months to see if they remain valid will be an additional administrative burden for utilities operating in Canada.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Note that reviews to cold weather preparedness plans may occur more frequently depending upon the nature causing the review (e.g., Generator Cold Weather Reliability Event).	
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper	
Answer	No
Document Name	
Comment	
R9 places the burden on the GO to determine if a constraint remains valid in accordance with Attachment 1. As previously stated in the comments to question 1, Attachment 1 does not provide objective and sufficiently detailed criteria for applicable entities to understand what is required of them. There is no certainty for the GO that the CEA or auditor will agree with subsequent determinations that a constraint remains valid which creates unnecessary compliance risks. Furthermore, if the SDT believes that the GO can make subsequent determinations of the validity of constraints based on the criteria of Attachment 1 then it should not be necessary to require CEA approval of the initial constraint declaration as the criteria would be the same for the initial and subsequent determinations.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT contends that Attachment 1 does provide expectations for entities. Please review the FERC Order that mandated NERC actions with regards to Generator Cold Weather Constraints.	
Robert Follini - Avista - Avista Corporation - 3	

Answer	No
Document Name	
Comment	
While Avista appreciates the intent of the February 16, 2023, date, we do not agree that compliance date should be aligned to when a glossary term is approved. We also note that there are other changes within the proposed standard that could impact what an entity includes in the design of their resource beyond the definition of Extreme Cold Weather Temperature, including the proposed definition of Generator Cold Weather Constraint. For this reason, we ask that the date used for Requirement R2, subparts 2.1 and 2.2 for new resources should be the approval of this Standard. NERC Reliability Standards should be forward looking and should not be aligned to compliance measures or dates from previous versions of Reliability Standards or approval dates of Glossary Terms.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT considered the urgency that FERC reiterated in the FERC Order that this DT was obligated to facilitate and would suggest that further deferments are not considered actionable at this point.	
David Vickers - David Vickers On Behalf of: Daniel Roethemeyer, Vistra Energy, 5; - David Vickers	
Answer	No
Document Name	
Comment	
Vistra agrees with comments made by Entergy.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to Entergy comments.	

Jeremy Lawson - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
See Marty Hostler comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to Marty Hostler comments.	
Michael Whitney - Northern California Power Agency - 3, Group Name NCPA	
Answer	No
Document Name	
Comment	
See Marty Hostler comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to Marty Hostler comments.	
Mason Jones - Mason Jones On Behalf of: Michael Whitney, Northern California Power Agency, 4, 6, 3, 5; - Mason Jones	
Answer	No
Document Name	
Comment	

See response to #2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to question #2.	
Marty Hostler - Northern California Power Agency - 4	
Answer	No
Document Name	
Comment	
NO. See response to #2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to question #2. Please review the June 27 FERC Order that the DT was obligated to facilitate.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	No
Document Name	
Comment	
For “known” constraints, a longer timeframe, such as 5 years, would be more applicable to reduce administrative burden on the entity.	
Likes 0	

Dislikes 0	
Response	
Thank you for your constructive comments. Bifurcating review based on a designation was not supported by the DT.	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	
PacifiCorp supports EEI comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	
Comment	
CEG Supports the NAGF response to this question. Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	

Response	
Thank you for your comments. Please see responses to NAGF comments.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
ACES agrees with the approach taken by the SDT to create a new Requirement R9 stipulating periodicity of the reviews. We believe this is the cleanest and most straightforward approach to address paragraph 94 of the FERC directive.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company agrees with EEI and requests the SDT to consider changing the required review period for GCWC declarations in Requirement 9 from 36-calendar months to 3 years.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support and comments. Please see responses to EEI comments.	

Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	Yes
Document Name	
Comment	
See EEI Comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your support and comments. Please see responses to EEI comments.	
Daniel Gacek - Exelon - 1, Group Name Exelon	
Answer	Yes
Document Name	
Comment	
Exelon supports the comments submitted by the EEI	
Likes 0	
Dislikes 0	
Response	
Thank you for your support and comments. Please see responses to EEI comments.	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3,5 - WECC	
Answer	Yes
Document Name	
Comment	

PNM agrees with comments of EEI	
Likes 0	
Dislikes 0	
Response	
Thank you for your support and comments. Please see responses to EEI comments.	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	Yes
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) on question 4	
Likes 0	
Dislikes 0	
Response	
Thank you for your support and comments. Please see responses to those organization’s comments.	
Mary Smith - Southern Indiana Gas and Electric Co. - 1,3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
SIGE supports EEI comments.	

Likes 0	
Dislikes 0	
Response	
Thank you for your support and comments. Please see responses to EEI comments.	
Nikki Carson-Marquis - Nikki Carson-Marquis On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Nikki Carson-Marquis	
Answer	Yes
Document Name	
Comment	
Minnkota Power Cooperative supports comments made by the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support and comments. Please see responses to MRO NSRF comments.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
NV Energy agrees that the revision addresses this directive and provides an effective balance with administrative efforts, however NV Energy would prefer the use of 3 calendar years instead of 36 calendar months to allow more flexibility in timing the analysis while not substantially impacting the frequency that the analysis occurs.	
Likes 0	
Dislikes 0	

Response	
Thank you for your support and comments. The use of 3 calendar years would extend review by as much as 364 days which does not support the FERC urgency noted within the June Order. The 36 calendar months selected may be more reasonable in garnerning FERC endorsement based on the urgency noted.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	Yes
Document Name	
Comment	
MRO NSRF agrees that the revision addresses this directive and provides an effective balance with administrative efforts, however MRO NSRF would prefer the use of 3 calendar years instead of 36 calendar months to allow more flexibility in timing the analysis while not substantially impacting the frequency that the analysis occurs.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments and support. The use of 3 calendar years would extend review by as much as 364 days which does not support the FERC urgency noted within the June Order. The 36 calendar months selected may be more reasonable in garnerning FERC endorsement.	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	
Answer	Yes
Document Name	
Comment	
MEC supports EEI and MRO NSRF comments.	
Likes 0	

Dislikes 0	
Response	
Thank you for your support and comments. Please see responses to those organization's comments.	
Richard Vendetti - NextEra Energy - 5	
Answer	Yes
Document Name	
Comment	
NextEra supports the comments provided from EEI below: EEI does not object to including a requirement to review Generator Cold Weather Constraints every 36 calendar months to address the Commission's concerns as described in paragraph 94, however EEI requests that the Drafting Team consider changing the proposed 36 calendar month review cycle to 3 calendar years in order to allow for more flexibility in timing entity reviews.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support and comments. Please see responses to EEI comments.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
AEPC signed on to ACES comments. Please see ACES comments.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments and support. Please see responses to ACES comments.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	
WEC Energy Group support the comments of the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support and comments. Please see responses to MRO NSRF comments.	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	Yes
Document Name	
Comment	
Black Hills Corporation feels that the review of every 36 calendar months to be fair.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Andrew Smith - APS - Arizona Public Service Co. - 5	

Answer	Yes
Document Name	
Comment	
AZPS agrees with this approach	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
AEP has no objections in requiring review every 36 calendar months.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	

EEI does not object to including a requirement to review Generator Cold Weather Constraints every 36 calendar months to address the Commission's concerns as described in paragraph 94, however EEI requests that the Drafting Team consider changing the proposed 36 calendar month review cycle to 3 calendar years in order to allow for more flexibility in timing entity reviews.	
Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	
Response	
Thank you for your comments. The use of 3 calendar years would extend review by as much as 364 days which does not support the FERC urgency noted within the June Order. The 36 calendar months selected may be more reasonable in garnerning FERC endorsement based on the urgency noted.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy does believe compliance to R8 should be achievable, but not preferred. The 5- year review cycle would span the typical generating unit planned outage cycle of 36-48 months, which promotes efficient planning and execution of winterization system/equipment upgrades necessary to eliminate constraints.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	

Comment
Overall this language works for GOs. NRG has a concern with the period from when an owner submits a Generator Cold Weather Constraint request and when a determination is finally made. Is that considered a "grace period" while awaiting the determination? What happens if the CEA review takes a long time, are there remedies or extensions that can be allowed if a CAP must be developed instead? Would this be part of the CEA's process?

Likes 0	
Dislikes 0	

Response
Thank you for your support and comments. The NERC process does have expectations built into it for CEA staff.

Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	

Comment
Overall this language works for GOs. NRG has a concern with the period from when an owner submits a Generator Cold Weather Constraint request and when a determination is finally made. Is that considered a "grace period" while awaiting the determination? What happens if the CEA review takes a long time, are there remedies or extensions that can be allowed if a CAP must be developed instead? Would this be part of the CEA's process?

Likes 0	
Dislikes 0	

Response
Thank you for your support and comments. The NERC process does have expectations built into it for CEA staff.

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes

Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Rhonda Jones - Invenergy LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Colin Chilcoat - Invenergy LLC - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Bob Cardle - Bob Cardle On Behalf of: Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Bob Cardle	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Becky Burden - Public Utility District No. 1 of Snohomish County - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Erin Wilson - NB Power Corporation - New Brunswick Power Transmission Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tony Hua - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Michael Dillard - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Lovita Griffin - Austin Energy - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Donald Lock - Talen Generation, LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	
Document Name	
Comment	
See EEI's comments.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. Please see responses to EEI comments.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
Texas RE agrees with the 36-month review of the Generator Cold Weather Constraints. Texas RE recommends, however, that there be an explicit requirement to submit any significant updates to the CEA, since the Constraints are submitted to the CEA initially.	
Likes 0	
Dislikes 0	
Response	
Thank you for the constructive comments.	
Darcy O'Connell - California ISO - 2	
Answer	
Document Name	
Comment	
CAISO agrees with comments submitted by the ISO/RTO Counsel (IRC) Standards Review Committee	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to IRC comments.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC	
Answer	

Document Name	
Comment	
WECC appreciates the separation of this responsibility into a new Requirement and believes the 36 calendar months is an adequate timeframe for reviews to occur.	
Likes 0	
Dislikes 0	
Response	
Thank you for the constructive comment.	

5. Please provide any additional comments for the standard drafting team to consider, if desired.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Donald Lock - Talen Generation, LLC - 5	
Answer	
Document Name	
Comment	
Talen supports the comments of the NAGF, and adds: 1. Replace, “and adjustments utilized for missing or invalid hourly temperature data, if necessary,” in R1 and M1 with a footnote stating, “NOAA and ASOS data are deemed adequate as-is, and bad data points may be expunged. An alternative weather station must be used for filling the gap, however, if the one selected for ECWT calculations does not have records going back to 1/1/2000.” The reason for this change is that statistical analysis exists for the purpose of quickly developing an approximate answer that is close enough for all practical purposes, so seeking 100.000% exactness in the ECWT calculation does nothing but divert effort and attention from the important freeze	

prevention work to be done, especially since NERC's 0.2 percentile criterion is simply a benchmark and has no inherent BES reliability significance.

2. Replace, "provide the capability," in R2 with, "are designed to provide the capability." Our #1 freeze prevention problem is heat tracing/insulation systems that are oversold and/or mis-installed, such that they do not protect to the stated design conditions. A system rated for say -10 F and 20 mph may be suitable for -10 F/0 mph, but survival is questionable at -10 F/10 mph, and there's usually no chance of staying online at -10 F/20 mph. Such trips should under EOP-012-3 require that the GO install improved protection (if the trip occurred when above the ECWT), but they should not constitute a NERC violation on the grounds that the GO failed to, "provide the capability."

3. The Known Generator Cold Weather Constraints in Att. 1 are introduced by saying that they are circumstances, but some are activities rather than nouns. "Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters," for example should be, "Systems that apply heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters." That is, such systems provide a finite degree of protection, and the point at which they can be overwhelmed by unusually severe winter storms is unknown. Trips therefore do not require replacement by larger equipment (which would still be subject to the same uncertainties), nor do GOs incur a GCWRE if reducing load in a snowstorm as a proactive operational measure to maximize their safety margin.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. Please see responses to NAGF comments. Please review the ECWT calculation document updated by the DT. Draft Implementation Guidance is being developed and reviewed by DT members who have sought collaborative support from industry. If a unit fails to perform, it fails whether it was a design or installation failure. The scenario suggested reflects a plant failing the first time it meets the ECWT criteria. The DT is not obligated to opine on compliance and defers related comments to NERC staff. The DT made changes to Attachment 1 based on industry feedback. Please review the definition of Generator Cold Weather Reliability Event.

Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer	
Document Name	

Comment

R1 appears to require entities to find data to address missing data points. The approach should align more with the following NAGF suggestion:

"Using publicly available government data sources (such as NOAA or ASOS), the ECWT calculation is complete if the data source has greater than 90 percent of the expected data points and any gap greater than 168 hours is addressed."

Entities are capable of policing themselves. The reporting process with the CEA will be an additional burden potentially requiring multiple iterations of revisions. This may impact the actual goal of restoring equipment in a timely manner.

Implementation Plan, R3 was revised to include existing units, but expanded description appears to only apply to entities beginning commercial operation after the effective date of EOP-012-3.

Likes 1	Berkshire Hathaway Energy - MidAmerican Energy Co., 3, Amato Joseph
Dislikes 0	

Response

Thank you for your comments. Please see responses to NAGF comments.

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC

Answer	
Document Name	

Comment

WECC recognizes there is a lot of compliance concern being expressed with regards to ECWT determination. The DT has done a great job trying to alleviate the concern listen to the points of view, and provide clarity where it could. Implementation Guidance should be considered.

WECC believes the Technical Rationale could be updated to include thoughts on "existing" versus "new" freeze protection measures. The language should reflect the high level thoughts on what those terms mean to avoid entities replacing failed heat trace with "new" heat trace that may simply be a different brand, ampacity, or length. Additionally, changes in the Technical Rationale to provide guidance on units that are similar in nature and exposed to similar climates may help understanding of expectations (within R6/R7 and Attachment 1).

Likes 0	
Dislikes 0	
Response	
Thank you for your constructive comments. Implementation Guidance is in the process of being drafted.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	
Document Name	
Comment	
NRG would appreciate the SDT to update the NERC guidance on calculating the ECWT to address the new verbiage in R1.1 where adjustments for missing or invalid hourly temperature data is addressed. The method suggested by NAGF in achieving 90% of expected data points should be sufficient. *Requirement R4.1 was adjusted to include ECWT identification by unit- this generally doesn't change at each site footprint.* *Regarding the CW CAP Extension Request and Constraint process, the timelines for submittal are 60 days ahead of an expiration. If NERC/RE/CEA takes the full 15 days to acknowledge receipt and 45 days to review, but rejects the request, there is not time for an entity to correct a deficiency. This should be a shorter review period or require a longer time period for follow up. If the Process document is to be utilized as enforcement policy there is no recourse for Registered Entities to avoid non-compliance associated with timelines of CAP Extensions or Constraint Rejections.*	
Likes 0	
Dislikes 0	
Response	
Thank you for your constructive comments. Please see responses to NAGF comments. The DT agrees with the idea that ECWT will be by site and would expect a single ECWT determination effort to note that accordingly. The DT defers comments regarding the NERC process to NERC staff.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	

Answer	
Document Name	
Comment	

NRG would like to express its appreciation of the drafting team's work to incorporate FERC Order language in consultation with industry participants.

NRG would appreciate the SDT to update the NERC guidance on calculating the ECWT to address the new verbiage in R1.1 where adjustments for missing or invalid hourly temperature data is addressed. The method suggested by NAGF in achieving 90% of expected data points should be sufficient.

Requirement R4.1 was adjusted to include ECWT identification by unit- this generally doesn't change at each site footprint.

Regarding the CW CAP Extension Request and Constraint process, the timelines for submittal are 60 days ahead of an expiration. If NERC/RE/CEA takes the full 15 days to acknowledge receipt and 45 days to review, but rejects the request, there is not time for an entity to correct a deficiency. This should be a shorter review period or require a longer time period for follow up. If the Process document is to be utilized as enforcement policy there is no recourse for Registered Entities to avoid non-compliance associated with timelines of CAP Extensions or Constraint Rejections.

Likes 0	
Dislikes 0	

Response

Thank you for your constructive comments. Please see responses to NAGF comments. The DT agrees with the idea that ECWT will be by site and would expect a single ECWT determination effort to note that accordingly.

Marty Hostler - Northern California Power Agency - 4	
Answer	
Document Name	
Comment	
Further, during webinars it was noted that the CEAs will not be required to disclose details of any entities Corrective Plans or Cold Weather Constraints. This suggest an unwillingness to be transparent. It sets up giving an unfair competitive advantage to some entities over others. For instance, one entity that may have a corrective action plan that includes repairing/replacing structural steel or wind turbine blades, but a CEA may rule them as manufacture limitiations and thus not requiring them to be replaced. On the other hand another entity my be required to spend time and dollars making CEA ruled corrective actions that are too costly for that entity to remain competitive in the market. Without transparency entities don't know if they are being unfairly required to replace or modify equipment.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Being "required" versus being willing are two different things and in no way should be considered as being transparent or not.	
Mason Jones - Mason Jones On Behalf of: Michael Whitney, Northern California Power Agency, 4, 6, 3, 5; - Mason Jones	
Answer	
Document Name	
Comment	
Further, during webinars it was noted that the CEAs will not be required to disclose details of any entities Corrective Plans or Cold Weather Constraints. This suggest an unwillingness to be transparent.	

It sets up giving an unfair competitive advantage some entity over others. For instance, one entity that may be required to repair/replace structural steel or wind turbine blades may not be required to replace them but a different entity may need to replace some of their equipment. Without transparency entities don't know if are being unfairly required to replace or modify equipment.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Being "required" versus being willing are two different things and in no way should be considered as being transparent or not.	
Michael Whitney - Northern California Power Agency - 3, Group Name NCPA	
Answer	
Document Name	
Comment	
See Marty Hostler comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to Marty Hostler comments.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	
Document Name	
Comment	

-FirstEnergy believes language should exist to exempt implementation of protection measures (and thereby exempting a cold weather reliability event) in the case of risk to employee health and safety due to exposure to hazardous conditions beyond control (severe wind chill, poor visibility, flooding, fire, etc). - FirstEnergy believes language should exist exempting a reliability event in the case of extreme cold weather conditions below the established ECWT. - FirstEnergy believes that the term 'due to circumstances beyond its control' in sections 6.4 and 7.2 is too subjective to be a condition of compliance and should be removed; this would broaden the qualifying circumstances to include unforeseen events or conditions of any nature, and leave approval or denial of an extension request at the full discretion of the CEA.	
Likes 0	
Dislikes 0	
Response	
Thank you for your constructive comments. The DT would expect that each entity will make a decision as to when the implementation of freeze protection measures is to occur. The definition of Generator Cold Weather Reliability Event includes the caveat language: "the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature" so no change is needed. The DT believes the language is flexible enough and reflects current expectations in other Standards (e.g., PRC-004 R5) .	
Erin Wilson - NB Power Corporation - New Brunswick Power Transmission Corporation - 5	
Answer	
Document Name	
Comment	

Consideration should be given to updating the MOD-032-1 Requirement R1 data requirements to include generator cold weather data operating limitations under EOP-012-3 Requirement R1, with the objective to ensure that Planning Coordinators and Transmission Planners developing benchmark planning cases for performing Extreme Temperature Assessments pursuant to TPL-008-1 R3 have the information necessary to realistically posture their cases for identified benchmark temperature events.

Regarding the ECWT calculation, suggest adding guidance to the Technical Rationale regarding combining data from different weather data resources, so that the frequency sampling is the same. For example, if one weather data source gathers temperature data three times per hour and another weather data source gathers weather data one time per hour, this will skew the 0.2 percentile in favor of the more frequent weather data source. Suggest adding guidance with a threshold such as at least 66% of the hours for each year from each weather data source must have hourly data.

Could add examples to the Technical Rationale and/or the ECWT Calculation document that shows what would be considered a valid approach to handling missing temperature data.

Add clarification in the Technical Rationale regarding the R5 training requirement. For dispersed generation resources with Remote Operation Centers, is it the expectation that these personnel be trained on the Cold Weather Preparedness Plan or is it just on-site operations and maintenance personnel? Also, R5 does not use the NERC defined term of “Agreement” (A contract or arrangement, either written or verbal and sometimes enforceable by law) being needed between the GO and GOP regarding who is responsible for the training. Suggest clarifying in the Technical Rationale that this is not the expectation, but rather it can be an informal agreement between the GO and GOP.

Likes 0	
Dislikes 0	

Response

Thank you for the constructive comments. Members of the DT and industry groups are drafting Implementation Guidance regarding ECWT for NERC review and approval. Note that examples to demonstrate compliance are to be provided in Implementation Guidance and

not the Technical Rationale. Requirement R5 is for anyone responsible for implementing the cold weather preparedness plan regardless of location (or company). It is understood that there will be discussions and an agreement on who is designated to provide training.	
Jeffrey Streifling - NB Power Corporation - 1	
Answer	
Document Name	
Comment	
Consideration should be given to updating the MOD-032-1 Requirement R1 data requirements to include generator cold weather data operating limitations under EOP-012-3 Requirement R1, with the objective to ensure that Planning Coordinators and Transmission Planners developing benchmark planning cases for performing Extreme Temperature Assessments pursuant to TPL-008-1 R3 have the information necessary to realistically posture their cases for identified benchmark temperature events. Regarding the ECWT calculation, suggest adding guidance to the Technical Rationale regarding combining data from different weather data resources, so that the frequency sampling is the same. For example, if one weather data source gathers temperature data three times per hour and another weather data source gathers weather data one time per hour, this will skew the 0.2 percentile in favor of the more frequent weather data source. Suggest adding guidance with a threshold such as at least 66% of the hours for each year from each weather data source must have hourly data. Could add examples to the Technical Rationale and/or the ECWT Calculation document that shows what would be considered a valid approach to handling missing temperature data. Add clarification in the Technical Rationale regarding the R5 training requirement. For dispersed generation resources with Remote Operation Centers, is it the expectation that these personnel be trained on the Cold Weather Preparedness Plan or is it just on-site operations and maintenance personnel? Also, R5 does not use the NERC defined term of “Agreement” (A contract or arrangement, either written or verbal and sometimes enforceable by law) being needed between the GO and GOP regarding who is responsible for the training. Suggest clarifying in the Technical Rationale that this is not the expectation, but rather it can be an informal agreement between the GO and GOP.	
Likes 0	

Dislikes 0	

Response
Thank you for the constructive comments. Members of the DT and industry groups are drafting Implementation Guidance regarding ECWT for NERC review and approval. Note that examples to demonstrate compliance are to be provided in Implementation Guidance and not the Technical Rationale. Requirement R5 is for anyone responsible for implementing the cold weather preparedness plan regardless of location (or company). It is understood that there will be discussions and an agreement on who is designated to provide training.

Carver Powers - Utility Services, Inc. - 4	
Answer	
Document Name	

Comment
1. Regarding the ECWT calculation, suggest adding guidance to the Technical Rationale regarding combining data from different weather data resources, so that the frequency sampling is the same. For example, if one weather data source gathers temperature data three times per hour and another weather data source gathers weather data one time per hour, this will skew the 0.2 percentile in favor of the more frequent weather data source. Suggest adding guidance with a threshold such as at least 66% of the hours for each year from each weather data source must have hourly data. Could add examples to the Technical Rationale and/or the ECWT Calculation document that shows what would be considered a valid approach to handling missing temperature data. 2. Add clarification in the Technical Rationale regarding the R5 training requirement. For dispersed generation resources with Remote Operation Centers, is it the expectation that these personnel be trained on the Cold Weather Preparedness Plan or is it just on-site operations and maintenance personnel? Also, R5 does not use the NERC defined term of “Agreement” (A contract or arrangement, either written or verbal and sometimes enforceable by law) being needed between the GO and GOP regarding who is responsible for the training. Suggest clarifying in the Technical Rationale that this is not the expectation, but rather it can be an informal agreement between the GO and GOP.

Likes 0	

Dislikes 0	
Response	
Thank you for the constructive comments. Members of the DT and industry groups are drafting Implementation Guidance regarding ECWT for NERC review and approval. Note that examples to demonstrate compliance are to be provided in Implementation Guidance and not the Technical Rationale. Requirement R5 is for anyone responsible for implementing the cold weather preparedness plan regardless of location (or company). It is understood that there will be discussions and an agreement on who is designated to provide training.	
Thomas Foltz - AEP - 5	
Answer	
Document Name	
Comment	
The most recent revision of R2 removes the phrase “in place”, and as a result, there is no longer a requirement to have CAP in place upon beginning commercial operation. AEP requests that text be added to make it clear exactly when the CAP needs to be in place. R6’s “Each Generator Owner shall, when experiencing a Generator Cold Weather… Reliability Event at a generating unit” is problematic. The text “when experiencing” infers (likely quite unintentionally) that the Corrective Action Plan will be developed and implemented *during* when the event is occurring. The latest draft of R6 removes the text “The Corrective Action Plan shall be developed before the first day of July, but not more than 150 days after the Generator Cold Weather Reliability Event.” This is problematic, as it is no longer clear when the CAP must be in place. In the current draft, it is only clear when the CAP is to be completed. AEP recommends re-inserting the text that was removed. Section E “Associated Documents” specifies the “Calculating Extreme Cold Weather Temperature” document, but does not include a hyperlink to it. We suggest that a hyperlink be added for this document, perhaps as a footnote or similar.	
Likes 0	
Dislikes 0	
Response	

Thank you for the constructive comments. The Drafting Team and Standards Committee reviewed these sections and made changes to Requirement R6 language defining the timeline for development of the CAP. In R2, the requirement is to develop, implement, and complete the CAP prior to April 1, 2028.	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	
Document Name	
Comment	
The Generator Cold Weather CAP Extension and Constraint Process sets timeline expectations for CAP extensions, including for CEA. There could be situations where if the CEA exceeds the 45-day expectation to approve an extension, the submitting GO would be in potential noncompliance to EOP-012-3 if the extension rejection is received after the initial CAP implementation deadline. BC Hydro recommends that a provision to allow flexibility for compliance enforcement should there be a case where the CAP timetables are exceeded while an extension request is being processed by the CEA.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. However, as stated in many NERC documents, potential noncompliance is inherently dependent upon the facts and circumstances.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	
Document Name	
Comment	
Tri-State Supports the MRO NSRF Comments	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments. Please see responses to MRO NSRF comments.	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	
Document Name	
Comment	
Black Hills Corporation agrees with the NAGF's additional proposed EOP-012-3 comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to NAGF comments.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	
Document Name	
Comment	
WEC Energy Group supports the comments of the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to MRO NSRF comments.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	

Answer	
Document Name	
Comment	
Thank you for the opportunity to comment.	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Richard Vendetti - NextEra Energy - 5	
Answer	
Document Name	
Comment	

NextEra would like to address concerns contained in the proposed modifications to EOP-012-3 and the Generator Cold Weather CAP Extension and Constraint Process:

CAP Extension Request and Cold Weather Constraint Review Process

NextEra does not dispute the time frame in which to submit a CAP extension, however, is concerned with the vague language contained in the CAP Extension Request Review Process and the Constraint Review Process. NextEra cannot determine what type of documentation is required to satisfy both submittals to the CEA. This document should include various examples for generation sites, including wind and solar.

NextEra does not agree that Align is the best system to utilize for compliance obligations with EOP-012-3. Is NERC proposing a separate module for these submittals? As currently configured, submittal in Align will be unduly burdensome and will co-mingle self-report and mitigation plans regarding potential non-compliance items with operational reporting. Further, NextEra is concerned the Align system may not be able to handle such voluminous data as NextEra will likely have to submit for CAP and cold weather constraints. NextEra currently operates approximately 320 generation sites, with that number increasing in 2025. NextEra is concerned that not only would

this be burdensome to the entities, but also to CEA staff as well in processing and addressing CAP submittals, extensions and cold weather constraints and cause undue delays. NextEra does not dispute the need for a review or “appeal” process following the denial of a CAP extension request and Cold Weather Constraint, however this process should be further defined within the document by the Standard Drafting Team. NextEra does not recognize the benefit of a joint review of a denial by NERC and the CEA without the opportunity for sufficient due process, including (i) a clearly defined process, (ii) opportunity to submit additional documentation, as needed, and (iii) review by an independent source such a designated cold weather panel or advisory committee. There is no further explanation of the steps following the denial of a CAP extension request or cold weather constraint. Will entities be out of compliance with EOP-012-3 if a cold weather constraint is denied and the entity has not submitted a CAP? If so, will the entity have time in order to submit a CAP without being non-compliant? This process should be fully explained within the document. NextEra would like to see industry visibility on the approval and denial of Cold Weather Constraints. NERC should be transparent in the release of this information, as all of the industry faces similar challenges in dealing with extreme cold weather and would benefit in understanding what type of constraints are being approved and denied by the CEA. This could be accomplished in a manner such as quarterly reports and CEA subcommittee meetings. The submitting entity need not be recognized within the reports, however the type of constraint with reasons for approval or denial should be stated.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The NERC process indicates that the PDS module may be the primary interaction with Align with other tools available but evidence to support Align entries will utilize the SEL (or other options as needed). The industry has been unclear as to how many Corrective Action Plans, Corrective Action Plan extensions, and Generator Cold Weather Constraints that may be needed. The DT will recommend that NERC staff provide information related to approval/denial of Generator Cold Weather Constraints in a manner similar to potential noncompliances or compliance exceptions.

Darcy O'Connell - California ISO - 2	
Answer	
Document Name	

Comment	
CAISO agrees with comments submitted by the ISO/RTO Counsel (IRC) Standards Review Committee	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to IRC comments.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	
Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	
N/A	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 3	
Answer	
Document Name	
Comment	
MEC supports NAGF comments. MEC would cast an affirmative ballot if NAGF comments for Q1, and EEI comments for Questions 2 and 3 are adopted by the SDT.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to NAGF comments.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	
Document Name	
Comment	

Due to the realized ambiguity of the requirement for ECWT calculation and the flexibility afforded this standard drafting team by their SAR, the MRO NSRF makes the following suggestion to improve the clarity and auditability of the ECWT calculation, possibly via footnote in R1.1.

If using publicly available government data sources (such as NOAA or ASOS), the ECWT calculation will be considered complete if the data source (or sources) has greater than 90 percent of the necessary data points and any gap greater than 168 continuous hours is addressed.

MRO NSRF also suggests the following changes to the GCWRE definition to ensure that the language matches the intent. There are concerns that the language would for (2) and (3) would look at individual generating units of an I4 generator and not the plant/facility in aggregate as intended.

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit or **IBR fails** to synchronize within a specified start-up time; or

(3) a Forced Outage **of the unit or IBR**.

MRO NSRF does believe that these two issues is important and must be addressed, preferably by this drafting team as it would be within the scope of the SAR which it is operating under, however MRO NSRF also recognizes the constraints under which this Standard Drafting

Team is operating and does not view correcting these issues as a something must be addressed by this Standard Drafting Team at this time. Overall, MRO NSRF appreciates the improvement that has been made between the first and second drafts of this standard. Even if this improvement doesn't translate to a significantly higher balloting result, the MRO NSRF does feel that this standard is much closer to passing than it was previously. Although MRO NSRF still has concerns about this standard as currently written, if the concerns are addressed, this would move the standard into an acceptable state for many members.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT considered the change in definition and noted that the current flexibility is consistent with the directives of the FERC order. An effort is underway to draft Implementation Guidance that may provide additional clarity on ECWT calculation. The DT does not believe the injection of IBR into the Generator Cold Weather Reliability Event is necessary at this point.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	
Document Name	
Comment	
Due to the realized ambiguity of the requirement for ECWT calculation and the flexibility afforded this standard drafting team by their SAR, NV Energy makes the following suggestion to improve the clarity and auditability of the ECWT calculation, possibly via footnote in R1.1. If using publicly available government data sources (such as NOAA or ASOS), the ECWT calculation will be considered complete if the data source (or sources) has greater than 90 percent of the necessary data points and any gap greater than 168 continuous hours is addressed. NV Energy also suggests the following changes to the GCWRE definition to ensure that the language matches the intent. There are concerns that the language would for (2) and (3) would look at individual generating units of an I4 generator and not the plant/facility in aggregate as intended.	

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature: (1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration; (2) a start-up failure where the unit or IBR fails to synchronize within a specified start-up time; or (3) a Forced Outage of the unit or IBR. NV Energy does believe that these two issues is important and must be addressed, preferably by this drafting team as it would be within the scope of the SAR which it is operating under, however NV Energy also recognizes the constraints under which this Standard Drafting Team is operating and does not view correcting these issues as a something must be addressed by this Standard Drafting Team at this time. Overall, NV Energy appreciates the improvement that has been made between the first and second drafts of this standard. Even if this improvement doesn't translate to a significantly higher balloting result, NV Energy does feel that this standard is much closer to passing than it was previously. Although NV Energy still has concerns about this standard as currently written, if the concerns are addressed, this would move the standard into an acceptable state for many members.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The DT considered the change in definition and noted that the current flexibility is consistent with the directives of the FERC order. An effort is underway to draft Implementation Guidance that may provide additional clarity on ECWT calculation. The DT does not believe the injection of IBR into the Generator Cold Weather Reliability Event is necessary at this point.

Ruchi Shah - AES - AES Corporation - 5	
Answer	
Document Name	
Comment	

AES US Renewables still has concerns about the process described in the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process. Although the timelines listed in the document (eg: no less than 60 calendar days) are considered un-enforceable, we are concerned that this document leaves a lot of room for interpretation by each Regional Entity's team that will be utilizing this document to review and approve CAP Extensions and Constraint Declarations. We do appreciate that there is language added in the latest version concerning the ability to request a joint NERC and CEA review of a denial (applies to both CAP extension and constraint declaration). However, this still does not resolve the issue that if a denial is given, what are the next steps Generator Owners are required to take - for example, does Generator Owner cease operation of the generation facility to avoid going into non-compliance because the Generator Owner could not get extension of CAP or constraint declaration approved?

We are also concerned about R8 Part 8.1 where there are only 15 calendar days allowed to submit a constraint declaration for new generators after commercial operation that could not meet R2. Again, based on the concerns mentioned above regarding the constraint approval process, this does not leave a lot of room for Generator Owners to work on next steps should the constraint be denied. Additionally, if the constraint is denied under R2.2, does that mean the Generator Owner is already under non-compliance?

We request that the drafting team take these scenarios into account to provide further clarifications or include additional language to make the process clearer, including guidance on next steps when a constraint declaration is denied under R2.2 and whether the GO can continue to operate the facility as is.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. Note that Standards are written to support reliable operations and not guarantee compliance. Ceasing operation to avoid compliance does not appear to be prudent or reasonable.

Nikki Carson-Marquis - Nikki Carson-Marquis On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Nikki Carson-Marquis

Answer	
Document Name	

Comment
Minnkota Power Cooperative appreciates the diligent efforts of the Standard Drafting Team to incorporate industry feedback while ensuring compliance with the FERC Directives. For EOP-012-2: requirement R1.1 and Measure M1, Minnkota recommends replacing “adjustments” with “methodology” to improve clarity and auditability. A methodology should be utilized for missing and invalid temperature data such that the entire dataset is processed in a consistent manner. In addition, Minnkota would like to echo the MRO NSRF’s concerns regarding the realized ambiguity of the Extreme Cold Weather Temperature (ECWT) calculation requirement. It is unrealistic to expect a multi-decade, hourly observation dataset to be 100% complete for all NOAA weather stations. Missing observations in a dataset may be due to a number of reasons including, but not limited to, malfunctioning instrumentation, observations not logged/saved/recorded in the official climate record, communications issues, or observations being flagged in the National Weather Service’s QAQC process, just to name a few. Thus, reasonable expectations are important to minimize auditing disparities between regions in the ERO Enterprise when entities are performing their required ECWT calculation(s). Minnkota understands the Standard Drafting Team is working to meet strict goals that do not allow for sufficient time to adequately address this issue.

Likes 0	
Dislikes 0	

Response
Thank you for the constructive comments. Please see responses to NAGF comments. The Technical Rationale and ECWT Calculation document were updated to reflect some of the current thoughts on missing data. After the posting, the members of the DT are developing draft Implementation Guidance to address the ECWT concerns further.

Mary Smith - Southern Indiana Gas and Electric Co. - 1,3,5,6 - RF	
Answer	
Document Name	

Comment

N/A	
Likes 0	
Dislikes 0	
Response	
N/A	
Chantal Mazza - Chantal Mazza On Behalf of: Junji Yamaguchi, Hydro-Quebec (HQ), 1, 5; Nicolas Turcotte, Hydro-Quebec (HQ), 1, 5; - Chantal Mazza	
Answer	
Document Name	
Comment	
We support NBPower's comment: Consideration should be given to updating the MOD-032-1 Requirement R1 data requirements to include generator cold weather data operating limitations under EOP-012-3 Requirement R1, with the objective to ensure that Planning Coordinators and Transmission Planners developing benchmark planning cases for performing Extreme Temperature Assessments pursuant to TPL-008-1 R3 have the information necessary to realistically posture their cases for identified benchmark temperature events.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to NB Powers comments.	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Hayden Maples	
Answer	
Document Name	

Comment
Evergy supports and incorporates by reference the comments of the Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) and the North American Generator Forum (NAGF) on question 5

Likes 0	
Dislikes 0	

Response
Thank you for your comments. Please see responses to those organization’s comments.

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC

Answer	
Document Name	

Comment
Regarding the Extreme Cold Weather Temperature (ECWT) calculation, suggest adding guidance to the Technical Rationale regarding combining data from different weather data resources, so that the frequency sampling is the same. For example, if one weather data source gathers temperature data three times per hour and another weather data source gathers weather data one time per hour, this will skew the 0.2 percentile in favor of the more frequent weather data source. Suggest adding guidance with a threshold such as at least 66% of the hours for each year from each weather data source must have hourly data. Recommend adding examples to the Technical Rationale and/or the ECWT Calculation document that shows what would be considered a valid approach to handling missing temperature data. Recommend adding clarification in the Technical Rationale regarding the R5 training requirement. For dispersed generation resources with Remote Operation Centers, is it the expectation that these personnel be trained on the Cold Weather Preparedness Plan or is it just on-site operations and maintenance personnel? Also, R5 does not use the NERC defined term of “Agreement” (A contract or arrangement, either written or verbal and sometimes enforceable by law) being needed between the GO and GOP regarding who is

responsible for the training. Suggest clarifying in the Technical Rationale that this is not the expectation, but rather it can be an informal agreement between the GO and GOP.	
Likes 0	
Dislikes 0	
Response	
Thank you for the constructive comments. After posting, the members of the DT are developing draft Implementation Guidance to address most of the ECWT concerns. Note that examples are to be provided in Implementation Guidance and not Technical Rationale. Requirement R5 is for anyone responsible for implementing the cold weather preparedness plan regardless of location (or company). It is understood that there will be discussions and an agreement on who is designated to provide training.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	
Document Name	
Comment	
The NAGF provides the following comments related to the proposed EOP-012-3 Draft #2: *Concerns with Requirement R1 – The modifications appear to require entities to find data to address missing data points. If the data points are randomly missing, this effort is completely unnecessary and burdensome and does not increase reliability. This position is supported by the statistical process being used. Similar to the process used under BAL-003 (which uses the median to determine compliance) the use of the percentile is very unlikely to be materially impacted due to randomly missing data points. The language in EOP-012-2 and draft EOP-012-3 R1 is somewhat misleading as the process to determine a percentile does not involve calculation of the data point. It only requires an entity to determine which data point is the one to be used for the stated purpose. The NAGF is not asking that the SDT correct this language at this time in the interest of expediently completing the effort. The NAGF is pointing it out only to help the SDT understand the true nature of the process used to determine the ECWT for any given location.* *As currently structured, each NERC Region is implementing different means of determining when an ECWT determination is sufficient, and this makes the standard unenforceable due to the ambiguous nature of the process. For this reason, the NAGF asks that the SDT address this flaw in the standard.* ***This issue, which was identified through the implementation of EOP-012-2, is an important issue for the NAGF***	

membership. The NAGF notes that this issue was raised starting with the draft SAR for EOP-012-3 and continues to be a concern for the NAGF.

As requested by the SDT, the NAGF is providing proposed language to address the concern. The NAGF does not believe this to be the only way to address the issue, but is providing this recommendation as one means to address the issue.

Requirement R1 - The NAGF recommends adding the following footnote to R1, 1.1:

"Using publicly available data sources (such as NOAA or ASOS), the ECWT calculation is complete if the data source has greater than 90 percent of the expected data points and any gap greater than 168 hours is addressed."

This footnote provides clarity and will ensure consistent enforcement related to the reasonable determination of the ECWT for all entities.

Requirement R8 – Recommend re-wording to read "If the CEA determines the declared Generator Cold Weather Constraint is not valid,"

Requirement R5 - This requirement continues to be written such that the process for compliance is not clear when a plant is operated by an entity other than the Generator Owner. The NAGF notes that the RSAW requests an agreement between the GO and GOP that is not part of the requirement. It is recommended that the SDT remedy this issue that has been identified since EOP-012 -1 was developed. The NAGF feels obligated to mention it since this is a flaw in the standard that should be addressed in order to improve the standard so that it meets the goals stated in NERC's Ten Benchmarks of an Excellent Standard, specifically items 6 (Completeness), 8 (Clear Language) and 9 (Practicality).

Generator Cold Weather Reliability Event Definition

While working to implement EOP-012-2 and EOP-012-3 Cold Weather Reliability Events materials, NAGF membership has identified a significant issue that needs to be corrected for EOP-012-3 in the NERC Cold Weather Reliability Event definition for bullets 2 and 3. In short, the 10% of total capacity and not less than 20 MW language should be added to bullet 3 at a minimum and potentially to bullet 2 if NERC intended "failure to start" to apply to IBR "plants" and not individual turbines/inverters.

Alternately, EOP-012-3 could add individual unit exclusion language similar that found in PRC-004.

Generator Cold Weather Reliability Event Definition:

For bullet 2: *It appears that bullet 2 only applies to synchronous units and not IBRs. The NAGF requests language be added to clarify this issue.*

For bullet 3: *The NAGF notes that the current NERC Glossary of Terms - Forced Outage language is too vague and could have unintended consequences.*

To address this concern, the modifications below are provided for consideration:

• (2) a start-up failure where the unit fails to ***synchronize*** *more than 10% of the total capacity of the unit but not less than 20 MWs*

• (3) a Forced Outage of more than 10% of the total capacity of the unit but not less than 20 MWs.

As an example, if a renewable plant has a bus outage that results in the complete loss of power to all auxiliary heating equipment and the renewable Facility (one unit out of 200 or the entire plant?) either fails to start at or above the ECWT, this could trigger the Generator Cold Weather Reliability Event per the existing bullets 2 and / or 3. Note the plant bus is the only power source nearby that can supply auxiliary heating power. Note the current NERC Glossary of Terms definition for NERC Forced Outage could also bring in the bus failure due to item 2 even though there wasn't a plant / unit trip.

Provided for Reference:

Generator Cold Weather Reliability Event: *One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:*

(1) a forced derate of more than 10% of the total capacity of the unit but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize (does this or does this not apply to IBRs?) within a specified start-up time; or

(3) a Forced Outage.

NERC Glossary of Terms Forced Outage:

1. The removal from service availability of a generating unit, transmission line, or other facility for emergency reasons.

2. The condition in which the equipment is unavailable due to unanticipated failure.

Concerns with the ERO Process Document: *The NAGF appreciates that the SDT is not drafting nor in charge of modifications to the process document posted with the proposed standard. However, since there is not a stated means for industry to provide input to the document otherwise, the NAGF has identified there are still concerns with the process document. The primary and overarching concerns are:* *1. While the document now has a footnote that states the ERO is aware that some issues may arise within the 60 days prior to the deadline for a CAP, the document still states it is a requirement to submit a CAP extension 60 days prior to the deadline. These two statements contradict each other. There is either a hard deadline or there is a desire to receive the request and associated documentation by that deadline but no requests will be denied. Please ask NERC and regional staff to clarify which this is and modify the document to clearly state if there is a hard deadline or if the Generator Owner should submit the request when identified.* *2. It appears that it is possible that a requested constraint may be denied after the deadlines stated in R6 and R7. This seems unreasonable, assuming that the Generator Owner has determined that there is not, in their estimation, a reasonable means to address the issue that caused the Generator Cold Weather Reliability Event. More details need to be added related to allowing additional time to address the issue without also going through the effort related to a self-report of a Potential Non-Compliance issue. A self-report for something that is already being discussed with the regional entity is unproductive and extremely inefficient for both the registered entity and the regional entities.* *The NAGF will provide a copy of the draft document with all our comments through an email to NERC staff if requested.*

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The Drafting Team believes the current language provides reasonable flexibility in ECWT calculation, and Implementation Guidance is being drafted by some DT members and industry groups to provide additional guidance. Requirement R5 is clear and an agreement, whether formal or informal, is needed to determine who has the responsibility to train the personnel. The DT does not believe the injection of IBR into the Generator Cold Weather Reliability Event is necessary at this point. The DT defers comments to the NERC process to NERC staff.
Carey Salisbury - Santee Cooper - 5, Group Name Santee Cooper

Answer	

Document Name	
Comment	
Santee Cooper supports the NAGF comments pertaining to missing/invalid data associated with R1 ECWT calculation. Clarity should be provided regarding criteria for when missing/invalid data must be addressed.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to NAGF comments.	
Romel Aquino - Edison International - Southern California Edison Company - 3	
Answer	
Document Name	EEI Near Final Draft Comments _ Project 2024-03 _ Draft 2 _ Rev 0f _ 12_13_2024.docx
Comment	
See comments submitted by the Edison Electric Institute	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI comments.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	
Document Name	
Comment	
Southern Company endorses MRO's NERC Standards Review Forum (NSRF) comments and suggestions in response to this question.	

Southern Company is also appreciative and supportive of the SDT completing the process but looks forward to the opportunity to improve the Standard further with the remaining commenting periods.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to MRO NSRF comments.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	
Document Name	
Comment	
Thank you for the opportunity to comment.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	
Document Name	
Comment	
Ameren supports NAGF's comments.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comments. Please see response to NAGFs comments.	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation has no additional comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	
Document Name	
Comment	
The SRC has concerns and recommendations regarding some of the revised Requirements and regarding the Technical Rationale, as follows. **Requirement R1**. **Request:** Remove the language from Part 1.1 that addresses missing or invalid temperature data.	

Justification: The SRC believes that the language added to Part 1.1 of Requirement R1 regarding missing or invalid temperature data is outside the scope of what is needed to address FERC's directives from the June 2024 Order and is a much broader topic that should be addressed with a dedicated project or working group as entities gain real-world experience calculating Extreme Cold Weather Temperatures and implementing EOP-012.

Consequently, the SRC recommends that the drafting team remove this language from the standard and that NERC establish a working group to analyze and develop guidance material on the topic of accounting for missing and invalid temperature data in Extreme Cold Weather Temperature calculations. This approach will allow the development of best practices for addressing missing and invalid data without rewarding poor data collection and retention practices or providing an avenue for entities to cherry-pick temperature data to artificially elevate an Extreme Cold Weather Temperature.

Requirement R7, Part 7.2.2.

Request: Revise Part 7.2.2 to read as follows: "Revisions to the selected actions in Part 7.1, if any, and any operational measures that will be in place while the Corrective Action Plan is being implemented."

Justification: The SRC notes that Part 7.2.2 of Requirement R7 uses the lowercase term "operating procedures" as distinguished from the term "Operating Procedures" defined in the NERC Glossary of Terms. To further clarify that the Glossary definition of "Operating Procedures" does not apply in Part 7.2.2, the SRC recommends that the term "operational measures" be used instead of "operating procedures."

To further clarify Part 7.2.2, the SRC recommends that it be revised to read as follows: "Revisions to the selected actions in Part 7.1, if any, and any operational measures that will be in place while the Corrective Action Plan is being implemented."

Requirement R8, Part 8.1.

Request: Revise Part 8.1 of Requirement R8 to require new generating units to submit constraint declarations to the CEA within 5 calendar days after commercial operation (instead of the 15 calendar days proposed in the current draft of EOP-012-3). **Justification:** While the SRC recognizes that a new Generator Owner may not be able to complete the NERC registration process before its unit reaches commercial operations, new units should generally be designed and constructed to perform at the Extreme Cold Weather Temperature, and new units generally undergo an operational testing period that provides an opportunity to identify performance limitations before beginning commercial operations. As a result, any constraints for new units should be submitted for evaluation as quickly as possible to minimize the amount of time that elapses between the commercial operation date and the Compliance Enforcement Authority determination regarding the validity of the constraint. To minimize this gap, the SRC recommends that Part 8.1 of Requirement R8 be revised to require new generating units to submit constraint declarations to the CEA within 5 calendar days after commercial operation (instead of the 15 calendar days proposed in the current draft of EOP-012-3). **Technical Rationale**. The SRC recommends that the Technical Rationale be revised to include a flowchart detailing the process that applies when a Generator Cold Weather Reliability Event occurs, similar to the broader process flowchart currently included at the end of the Technical Rationale.

Likes 0	
Dislikes 0	

Response
Thank you for your constructive comments. After the posting, the members of the DT are drafting Implementation Guidance to consider. The use of “Operating Procedure” was a direct lift from TPL-007. GOs wanted lower-case because of the definition (as innocuous as it is) and the DT allowed that lower-casing but will consider the language provided if given the opportunity.

Colin Chilcoat - Invenergy LLC - 6	
Answer	
Document Name	
Comment	

Invenergy is comfortable with the requirements around the calculation of the Extreme Cold Weather Temperature, but it is concerned about the growing administrative burden implied by the revisions in Draft 2 of EOP-012-3 and in the associated Technical Rationale. It is unreasonable to expect Generator Owners to determine whether missing hourly data sourced from NOAA or ASOS would have been included in the list of the lowest 100 hourly temperature values in the dataset. We recommend that the drafting team establish a minimum percentage of expected data points above which a Generator Owner can consider their dataset sufficient to determine the ECWT. For example, the drafting team could select a confidence level consistent with NERC's Sampling Methodology Guidelines and Criteria.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The DT has entertained various aspects of ECWT determination and has seen several examples using simply Excel functions to determine missing data points. The DT is aware of consultants provide functional Excel spreadsheets that determine the ECWT, how many points are missing, and where the missing points are located that leads it to believe it is not unreasonable to review data once every five years (or during unit construction). The DT considered changes in the ECWT but declined to address the changes as more ambiguity in the determination of ECWT could result.

Rhonda Jones - Invenergy LLC - 5	
Answer	
Document Name	

Comment
Invenergy is comfortable with the requirements around the calculation of the Extreme Cold Weather Temperature, but it is concerned about the growing administrative burden implied by the revisions in Draft 2 of EOP-012-3 and in the associated Technical Rationale. It is unreasonable to expect Generator Owners to determine whether missing hourly data sourced from NOAA or ASOS would have been included in the list of the lowest 100 hourly temperature values in the dataset. We recommend that the drafting team establish a minimum percentage of expected data points above which a Generator Owner can consider their dataset sufficient to determine the ECWT. For example, the drafting team could select a confidence level consistent with NERC's Sampling Methodology Guidelines and Criteria.

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT has entertained various aspects of ECWT determination and has seen several examples using simply Excel functions to determine missing data points. The DT is aware of consultants provide functional Excel spreadsheets that determine the ECWT, how many points are missing, and where the missing points are located that leads it to believe it is not unreasonable to review data once every five years (or during unit construction). The DT considered changes in the ECWT but declined to address the changes as more ambiguity in the determination of ECWT could result.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	
Document Name	
Comment	
OPG support NBPower's comment: Consideration should be given to updating the MOD-032-1 Requirement R1 data requirements to include generator cold weather data operating limitations under EOP-012-3 Requirement R1, with the objective to ensure that Planning Coordinators and Transmission Planners developing benchmark planning cases for performing Extreme Temperature Assessments pursuant to TPL-008-1 R3 have the information necessary to realistically posture their cases for identified benchmark temperature events.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Suggestions to other Standards will be sent to other Projects (as applicable).	

End of Report

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Reminder
Standards Announcement
Project 2024-03 Revisions to EOP-012-2

Additional Ballots and Non-binding Poll Open through December 20, 2024

Now Available

Additional ballots for draft two of **EOP-012-3 Extreme Cold Weather Preparedness and Operations** and non-binding poll of the associated Violation Risk Factors and Violation Severity Levels are open through **8 p.m. Eastern, Friday, December 20, 2024**.

The Standards Committee approved the following waiver of provisions of the Standard Processes Manual (SPM) for Project 2024-03 Revisions to EOP-012-2:

- Informal comment period for SAR reduced from 30 days to as few as 15 days (Section 4.2);
- Initial formal comment and ballot period(s) reduced from 45 days to as little as 20 days, with the ballot pool formed concurrently during the first 10 days of the initial formal comment period, and with the ballot and non-binding poll of Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) conducted concurrently during the last 5 days of the comment period (Sections 4.8 and 4.9);
- Additional formal comment and ballot period(s) reduced from 30 days to as little as 15 days, with the ballot and non-binding poll of VRFs and VSLs conducted concurrently during the last 5 days of the comment period (Sections 4.9 and 4.12);
- Final ballot period(s) reduced from 10 days to as little as 5 days (Section 4.13).

Reminder Regarding Corporate RBB Memberships

Under the NERC Rules of Procedure, each entity and its affiliates is collectively permitted one voting membership per Registered Ballot Body Segment. Each entity that undergoes a change in corporate structure (such as a merger or acquisition) that results in the entity or affiliated entities having more than the one permitted representative in a particular Segment must withdraw the duplicate membership(s) prior to joining new ballot pools or voting on anything as part of an existing ballot pool. Contact ballotadmin@nerc.net to assist with the removal of any duplicate registrations.

Balloting

Members of the ballot pools associated with this project can log in and submit their votes by accessing the Standards Balloting and Commenting System (SBS) here.

- *Contact NERC IT support directly at https://support.nerc.net/ (Monday – Friday, 8 a.m. - 5 p.m. Eastern) for problems regarding accessing the SBS due to a forgotten password, incorrect credential error messages, or system lock-out.*

- *Passwords expire every **6 months** and must be reset.*
- *The SBS **is not** supported for use on mobile devices.*
- *Please be mindful of ballot and comment period closing dates. We ask to **allow at least 48 hours** for NERC support staff to assist with inquiries. Therefore, it is recommended that users try logging into their SBS accounts **prior to the last day** of a comment/ballot period.*

Next Steps

The ballot results will be announced and posted on the project page. The drafting team will review all responses received during the comment period and determine the next steps of the project.

For information on the Standards Development Process, refer to the Standard Processes Manual.

For more information or assistance, contact Senior Standards Developer, Ben Wu (via email) or at 470-542-6882. Subscribe to this project's observer mailing list by selecting "NERC Email Distribution Lists" from the "Service" drop-down menu and specify “Project 2024-03 Revisions to EOP-012-2 observer list” in the Description Box.

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NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2024-03 Revisions to EOP-012-2

Formal Comment Period Open through December 20, 2024

Now Available

An 18-day formal comment period for draft two of **EOP-012-3 Extreme Cold Weather Preparedness and Operations** is open through **8 p.m. Eastern, Friday, December 20, 2024**.

The Standards Committee approved the following waiver of provisions of the Standard Processes Manual (SPM) for Project 2024-03 Revisions to EOP-012-2:

- Informal comment period for SAR reduced from 30 days to as few as 15 days (Section 4.2);
- Initial formal comment and ballot period(s) reduced from 45 days to as little as 20 days, with the ballot pool formed concurrently during the first 10 days of the initial formal comment period, and with the ballot and non-binding poll of Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) conducted concurrently during the last 5 days of the comment period (Sections 4.8 and 4.9);
- Additional formal comment and ballot period(s) reduced from 30 days to as little as 15 days, with the ballot and non-binding poll of VRFs and VSLs conducted concurrently during the last 5 days of the comment period (Sections 4.9 and 4.12);
- Final ballot period(s) reduced from 10 days to as little as 5 days (Section 4.13).

The standard drafting team's considerations of the responses received from the previous comment period are reflected in this draft of the standard.

Reminder Regarding Corporate RBB Memberships

Under the NERC Rules of Procedure, each entity and its affiliates is collectively permitted one voting membership per Registered Ballot Body Segment. Each entity that undergoes a change in corporate structure (such as a merger or acquisition) that results in the entity or affiliated entities having more than the one permitted representative in a particular Segment must withdraw the duplicate membership(s) prior to joining new ballot pools or voting on anything as part of an existing ballot pool. Contact ballotadmin@nerc.net to assist with the removal of any duplicate registrations.

Commenting

Use the Standards Balloting and Commenting System (SBS) to submit comments. An unofficial Word version of the comment form is posted on the project page.

- *Contact NERC IT support directly at https://support.nerc.net/ (Monday – Friday, 8 a.m. - 5 p.m. Eastern) for problems regarding accessing the SBS due to a forgotten password, incorrect credential error messages, or system lock-out.*

- *Passwords expire every **6 months** and must be reset.*
- *The SBS **is not** supported for use on mobile devices.*
- *Please be mindful of ballot and comment period closing dates. We ask to **allow at least 48 hours** for NERC support staff to assist with inquiries. Therefore, it is recommended that users try logging into their SBS accounts **prior to the last day** of a comment/ballot period.*

Next Steps

Additional ballots for the standard and implementation plan, as well as a non-binding poll of the associated Violation Risk Factors and Violation Severity Levels will be conducted **December 16-20, 2024**.

For information on the Standards Development Process, refer to the Standard Processes Manual.

For more information or assistance, contact Senior Standards Developer, Ben Wu (via email) or at 470-542-6882. Subscribe to this project's observer mailing list by selecting "NERC Email Distribution Lists" from the "Service" drop-down menu and specify “Project 2024-03 Revisions to EOP-012-2 observer list” in the Description Box.

North American Electric Reliability Corporation
3353 Peachtree Rd, NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

BALLOT RESULTS

Comment: View Comment Results (/CommentResults/Index/356)
Ballot Name: 2024-03 Revisions to EOP-012-2 | Draft 1 EOP-012-3 AB 2 ST
Voting Start Date: 12/16/2024 12:01:00 AM
Voting End Date: 12/20/2024 8:00:00 PM
Ballot Type: ST
Ballot Activity: AB
Ballot Series: 2
Total # Votes: 217
Total Ballot Pool: 244
Quorum: 88.93
Quorum Established Date: 12/20/2024 12:14:45 PM
Weighted Segment Value: 44.54

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes w/ Comment	Negative Fraction w/ Comment	Negative Votes w/o Comment	Abstain	No Vote
Segment: 1	64	1	20	0.392	31	0.608	0	5	8
Segment: 2	4	0.4	0	0	4	0.4	0	0	0
Segment: 3	53	1	16	0.41	23	0.59	0	7	7
Segment: 4	12	0.9	4	0.4	5	0.5	0	2	1
Segment: 5	63	1	17	0.34	33	0.66	0	5	8
Segment: 6	42	1	17	0.486	18	0.514	0	4	3
Segment: 7	0	0	0	0	0	0	0	0	0
Segment: 8	0	0	0	0	0	0	0	0	0

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes w/ Comment	Negative Fraction w/ Comment	Negative Votes w/o Comment	Abstain	No Vote
Segment: 9	0	0	0	0	0	0	0	0	0
Segment: 10	6	0.6	6	0.6	0	0	0	0	0
Totals:	244	5.9	80	2.628	114	3.272	0	23	27

BALLOT POOL MEMBERS

Show All entries Search: Search

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	AEP - AEP Service Corporation	Dennis Sauriol		Affirmative	N/A
1	Allete - Minnesota Power, Inc.	Hillary Creurer		Negative	Comments Submitted
1	Ameren - Ameren Services	Tamara Evey		Negative	Third-Party Comments
1	APS - Arizona Public Service Co.	Daniela Atanasovski		Negative	Comments Submitted
1	Associated Electric Cooperative, Inc.	Mark Riley		Affirmative	N/A
1	Avista - Avista Corporation	Mike Magruder		Negative	Comments Submitted
1	Balancing Authority of Northern California	Kevin Smith	Tim Kelley	Affirmative	N/A
1	Basin Electric Power Cooperative	David Rudolph		Negative	Third-Party Comments
1	BC Hydro and Power Authority	Adrian Andreoiu		Abstain	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Berkshire Hathaway Energy - MidAmerican Energy Co.	Terry Harbour		None	N/A
1	Black Hills Corporation	Trevor Rombough		Negative	Comments Submitted
1	Bonneville Power Administration	Kamala Rogers-Holliday		None	N/A
1	CenterPoint Energy Houston Electric, LLC	Daniela Hammons		Affirmative	N/A
1	Central Iowa Power Cooperative	Kevin Lyons		Negative	Third-Party Comments
1	City Utilities of Springfield, Missouri	Michael Bowman		Affirmative	N/A
1	Colorado Springs Utilities	Corey Walker		Negative	Third-Party Comments
1	Con Ed - Consolidated Edison Co. of New York	Dermot Smyth		Affirmative	N/A
1	Dominion - Dominion Virginia Power	Steven Belle		Affirmative	N/A
1	Duke Energy	Katherine Street		Negative	Comments Submitted
1	Edison International - Southern California Edison Company	Robert Blackney		Negative	Comments Submitted
1	Entergy	Brian Lindsey		Negative	Comments Submitted
1	Evergy	Kevin Frick	Hayden Maples	Negative	Comments Submitted
1	Eversource Energy	Joshua London		Abstain	N/A
1	Exelon	Daniel Gacek		Abstain	N/A
1	FirstEnergy - FirstEnergy Corporation	John Martinez		Affirmative	N/A
1	Glencoe Light and Power Commission	Terry Volkmann		Negative	Third-Party Comments

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Great River Energy	Gordon Pietsch		Affirmative	N/A
1	Hydro-Quebec (HQ)	Nicolas Turcotte	Chantal Mazza	Negative	Comments Submitted
1	IDACORP - Idaho Power Company	Sean Steffensen		None	N/A
1	Imperial Irrigation District	Jesus Sammy Alcaraz	Denise Sanchez	Affirmative	N/A
1	International Transmission Company Holdings Corporation	Michael Moltane	Allie Gavin	Abstain	N/A
1	KAMO Electric Cooperative	Micah Breedlove		Affirmative	N/A
1	Long Island Power Authority	Isidoro Behar		None	N/A
1	M and A Electric Power Cooperative	William Price		Affirmative	N/A
1	Manitoba Hydro	Nazra Gladu		Negative	Comments Submitted
1	MEAG Power	David Weekley	Rebika Yitna	None	N/A
1	Minnkota Power Cooperative Inc.	Theresa Allard	Nikki Carson-Marquis	Negative	Third-Party Comments
1	Muscatine Power and Water	Andrew Kurriger		Negative	Third-Party Comments
1	N.W. Electric Power Cooperative, Inc.	Mark Ramsey		Affirmative	N/A
1	National Grid USA	Jacqueline Ryan		Negative	Third-Party Comments
1	NB Power Corporation	Jeffrey Streifling		Negative	Comments Submitted
1	Nebraska Public Power District	Jamison Cawley		Negative	Third-Party Comments
1	NiSource - Northern Indiana Public Service Co.	Alison Nickells		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Northeast Missouri Electric Power Cooperative	Brett Douglas		Affirmative	N/A
1	OGE Energy - Oklahoma Gas and Electric Co.	Terri Pyle		Negative	Third-Party Comments
1	Omaha Public Power District	Doug Peterchuck		Negative	Third-Party Comments
1	OTP - Otter Tail Power Company	Charles Wicklund		Negative	Third-Party Comments
1	Platte River Power Authority	Marissa Archie		Negative	Third-Party Comments
1	PNM Resources - Public Service Company of New Mexico	Lynn Goldstein		Negative	Comments Submitted
1	Portland General Electric Co.	Brooke Jockin		None	N/A
1	PPL Electric Utilities Corporation	Michelle McCartney Longo		Affirmative	N/A
1	Public Utility District No. 2 of Grant County, Washington	Joanne Anderson		Abstain	N/A
1	Salt River Project	Laura Somak	Israel Perez	Affirmative	N/A
1	Santee Cooper	Chris Wagner		Negative	Comments Submitted
1	SaskPower	Wayne Guttormson		None	N/A
1	Sempra - San Diego Gas and Electric	Mohamed Derbas		Negative	Third-Party Comments
1	Southern Company - Southern Company Services, Inc.	Matt Carden		Affirmative	N/A
1	Sunflower Electric Power Corporation	Paul Mehlhaff		None	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Tacoma Public Utilities (Tacoma, WA)	John Merrell	Jennie Wike	Negative	Third-Party Comments
1	Tennessee Valley Authority	David Plumb		Negative	Comments Submitted
1	Tri-State G and T Association, Inc.	Donna Wood		Negative	Comments Submitted
1	U.S. Bureau of Reclamation	Richard Jackson		Negative	Comments Submitted
1	Unisource - Tucson Electric Power Co.	Jessica Cordero		Affirmative	N/A
1	Xcel Energy, Inc.	Eric Barry		Affirmative	N/A
2	California ISO	Darcy O'Connell		Negative	Comments Submitted
2	Electric Reliability Council of Texas, Inc.	Kennedy Meier		Negative	Comments Submitted
2	PJM Interconnection, L.L.C.	Thomas Foster	Elizabeth Davis	Negative	Third-Party Comments
2	Southwest Power Pool, Inc. (RTO)	Joshua Phillips		Negative	Third-Party Comments
3	AEP	Leshel Hutchings		Affirmative	N/A
3	Ameren - Ameren Services	David Jendras Sr	Nick Leathers	Negative	Comments Submitted
3	APS - Arizona Public Service Co.	Jessica Lopez		Negative	Comments Submitted
3	Arkansas Electric Cooperative Corporation	Ayslynn Mcavoy		Abstain	N/A
3	Associated Electric Cooperative, Inc.	Todd Bennett		Affirmative	N/A
3	Avista - Avista Corporation	Robert Follini		Negative	Comments Submitted
3	BC Hydro and Power Authority	Ming Jiang		Abstain	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	Berkshire Hathaway Energy - MidAmerican Energy Co.	Joseph Amato		Negative	Comments Submitted
3	Black Hills Corporation	Josh Combs		Negative	Comments Submitted
3	Bonneville Power Administration	Ron Sporseen		Abstain	N/A
3	Buckeye Power, Inc.	Tom Schmidt	Ryan Strom	Abstain	N/A
3	Central Electric Power Cooperative (Missouri)	Adam Weber		Affirmative	N/A
3	Con Ed - Consolidated Edison Co. of New York	Lincoln Burton		Affirmative	N/A
3	CPS Energy	Juan Gomez		Abstain	N/A
3	Dominion - Dominion Virginia Power	Victoria Crider		Affirmative	N/A
3	Edison International - Southern California Edison Company	Romel Aquino		Negative	Comments Submitted
3	Entergy	James Keele		Negative	Comments Submitted
3	Evergy	Marcus Moor	Hayden Maples	Negative	Comments Submitted
3	Eversource Energy	Vicki O'Leary		None	N/A
3	Exelon	Kinte Whitehead		Abstain	N/A
3	FirstEnergy - FirstEnergy Corporation	Aaron Ghodooshim		Affirmative	N/A
3	Great River Energy	Michael Brytowski		Affirmative	N/A
3	KAMO Electric Cooperative	Tony Gott		Affirmative	N/A
3	M and A Electric Power Cooperative	Gary Dollins		None	N/A
3	Manitoba Hydro	Mike Smith		Negative	Comments Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	MEAG Power	Roger Brand	Rebika Yitna	None	N/A
3	MGE Energy - Madison Gas and Electric Co.	Benjamin Widder		Negative	Third-Party Comments
3	Muscatine Power and Water	Seth Shoemaker		Negative	Third-Party Comments
3	National Grid USA	Brian Shanahan		Negative	Third-Party Comments
3	New York Power Authority	Richard Machado		Negative	Third-Party Comments
3	NextEra Energy - Florida Power and Light Co.	Karen Demos		None	N/A
3	NiSource - Northern Indiana Public Service Co.	Steven Taddeucci		Affirmative	N/A
3	Northeast Missouri Electric Power Cooperative	Skyler Wiegmann		Affirmative	N/A
3	Northern California Power Agency	Michael Whitney	Mason Jones	None	N/A
3	NW Electric Power Cooperative, Inc.	Heath Henry		None	N/A
3	OGE Energy - Oklahoma Gas and Electric Co.	Donald Hargrove		Negative	Third-Party Comments
3	Omaha Public Power District	David Heins		Negative	Third-Party Comments
3	OTP - Otter Tail Power Company	Wendi Olson		Negative	Third-Party Comments
3	Platte River Power Authority	Richard Kiess		Negative	Third-Party Comments
3	PNM Resources - Public Service Company of New Mexico	Amy Wesselkamper		Negative	Comments Submitted
3	Portland General Electric Co.	Mayra Franco		Abstain	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	PPL - Louisville Gas and Electric Co.	James Frank		None	N/A
3	Sacramento Municipal Utility District	Nicole Looney	Tim Kelley	Affirmative	N/A
3	Salt River Project	Mathew Weber	Israel Perez	Affirmative	N/A
3	Santee Cooper	Vicky Budreau		Negative	Comments Submitted
3	Sempra - San Diego Gas and Electric	Bryan Bennett		Negative	Third-Party Comments
3	Sho-Me Power Electric Cooperative	Jarrod Murdaugh		Affirmative	N/A
3	Southern Company - Alabama Power Company	Joel Dembowski		Affirmative	N/A
3	Southern Indiana Gas and Electric Co.	Ryan Snyder		Affirmative	N/A
3	Tacoma Public Utilities (Tacoma, WA)	John Nierenberg	Jennie Wike	Negative	Third-Party Comments
3	Tennessee Valley Authority	Ian Grant		Negative	Comments Submitted
3	WEC Energy Group, Inc.	Christine Kane		Negative	Comments Submitted
3	Xcel Energy, Inc.	Nicholas Friebel		Affirmative	N/A
4	Alliant Energy Corporation Services, Inc.	Larry Heckert		Negative	Third-Party Comments
4	Arkansas Electric Cooperative Corporation	Jenni Sudduth		None	N/A
4	Buckeye Power, Inc.	Jason Procuniar	Ryan Strom	Abstain	N/A
4	DTE Energy	Patricia Ireland		Affirmative	N/A
4	FirstEnergy - FirstEnergy Corporation	Mark Garza		Affirmative	N/A
4	MGE Energy - Madison Gas and Electric Co.	Ray Mangiulli		Negative	Third-Party Comments

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
4	Northern California Power Agency	Marty Hostler		Negative	Comments Submitted
4	Sacramento Municipal Utility District	Foung Mua	Tim Kelley	Affirmative	N/A
4	Tacoma Public Utilities (Tacoma, WA)	Hien Ho	Jennie Wike	Negative	Third-Party Comments
4	Utility Services, Inc.	Carver Powers		Affirmative	N/A
4	WEC Energy Group, Inc.	Candace Morakinyo		Negative	Comments Submitted
4	Western Power Pool	Kevin Conway		Abstain	N/A
5	AEP	Thomas Foltz		Affirmative	N/A
5	AES - AES Corporation	Ruchi Shah		Negative	Comments Submitted
5	Ameren - Ameren Missouri	Sam Dwyer		None	N/A
5	American Municipal Power	Amy Ritts		Affirmative	N/A
5	APS - Arizona Public Service Co.	Andrew Smith		Negative	Comments Submitted
5	Associated Electric Cooperative, Inc.	Chuck Booth		Affirmative	N/A
5	Basin Electric Power Cooperative	Amanda Wangler		Negative	Third-Party Comments
5	BC Hydro and Power Authority	Christine Jennings		Abstain	N/A
5	Berkshire Hathaway - NV Energy	Dwanique Spiller		Negative	Comments Submitted
5	Black Hills Corporation	Sheila Suurmeier		Negative	Comments Submitted
5	Bonneville Power Administration	Milli Chennell		Abstain	N/A
5	Buckeye Power, Inc.	Kevin Zemanek	Ryan Strom	Abstain	N/A
5	Calpine Corporation	Whitney Wallace		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	Cogentrix Energy Power Management, LLC	Gerry Adamski		Affirmative	N/A
5	Colorado Springs Utilities	Jeffrey Icke		Negative	Third-Party Comments
5	Con Ed - Consolidated Edison Co. of New York	Michelle Pagano		Affirmative	N/A
5	Constellation	Alison MacKellar		None	N/A
5	Cowlitz County PUD	Deanna Carlson		None	N/A
5	Dairyland Power Cooperative	Tommy Drea		Negative	Third-Party Comments
5	DTE Energy - Detroit Edison Company	Mohamad Elhusseini		Affirmative	N/A
5	Duke Energy	Dale Goodwine		Negative	Comments Submitted
5	Edison International - Southern California Edison Company	Selene Willis		Negative	Comments Submitted
5	Enel Green Power	Natalie Johnson		Abstain	N/A
5	Evergy	Jeremy Harris	Hayden Maples	Negative	Comments Submitted
5	FirstEnergy - FirstEnergy Corporation	Matthew Augustin		Affirmative	N/A
5	Greenville Electric Utility System	Ashley Cotton		None	N/A
5	Greybeard Compliance Services, LLC	Mike Gabriel		Negative	Third-Party Comments
5	Hydro-Quebec (HQ)	Junji Yamaguchi	Chantal Mazza	Negative	Comments Submitted
5	Imperial Irrigation District	Tino Zaragoza	Denise Sanchez	Affirmative	N/A
5	Invenergy LLC	Rhonda Jones		Negative	Comments Submitted
5	Lincoln Electric System	Brittany Millard		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	Manitoba Hydro	Kristy-Lee Young		Negative	Comments Submitted
5	Muscatine Power and Water	Chance Back		Negative	Third-Party Comments
5	National Grid USA	Robin Berry		Negative	Third-Party Comments
5	Nebraska Public Power District	Ronald Bender		Negative	Third-Party Comments
5	New York Power Authority	Zahid Qayyum		Negative	Third-Party Comments
5	NextEra Energy	Richard Vendetti		Negative	Comments Submitted
5	NRG - NRG Energy, Inc.	Patricia Lynch		Affirmative	N/A
5	OGE Energy - Oklahoma Gas and Electric Co.	Patrick Wells		Negative	Third-Party Comments
5	Oglethorpe Power Corporation	Donna Johnson		Affirmative	N/A
5	Oklahoma Municipal Power Authority	Patrick Tuttle		Affirmative	N/A
5	Omaha Public Power District	Kayleigh Wilkerson		Negative	Third-Party Comments
5	Ontario Power Generation Inc.	Constantin Chitescu		Negative	Comments Submitted
5	OTP - Otter Tail Power Company	Stacy Wahlund		Negative	Third-Party Comments
5	Pacific Gas and Electric Company	Tyler Brun	Bob Cardle	Negative	Comments Submitted
5	Platte River Power Authority	Jon Osell		Negative	Third-Party Comments
5	Portland General Electric Co.	Ryan Olson		Abstain	N/A
5	Public Utility District No. 1 of Snohomish County	Becky Burden		Negative	Comments Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	Sacramento Municipal Utility District	Ryder Couch	Tim Kelley	Affirmative	N/A
5	Santee Cooper	Carey Salisbury		Negative	Comments Submitted
5	Seminole Electric Cooperative, Inc.	Melanie Wong		None	N/A
5	Sempra - San Diego Gas and Electric	Jennifer Wright	Jennifer Lapaix	Negative	Third-Party Comments
5	Southern Company - Southern Company Generation	Leslie Burke		Affirmative	N/A
5	Southern Indiana Gas and Electric Co.	Larry Rogers		Affirmative	N/A
5	Tacoma Public Utilities (Tacoma, WA)	Ozan Ferrin	Jennie Wike	Negative	Third-Party Comments
5	Talen Generation, LLC	Donald Lock		Negative	Comments Submitted
5	Tennessee Valley Authority	Darren Boehm		None	N/A
5	TransAlta Corporation	Ashley Scheelar		None	N/A
5	Tri-State G and T Association, Inc.	Sergio Banuelos		Negative	Comments Submitted
5	U.S. Bureau of Reclamation	Wendy Kalidass		None	N/A
5	Vistra Energy	Daniel Roethemeyer	David Vickers	Negative	Comments Submitted
5	WEC Energy Group, Inc.	Michelle Hribar		Negative	Comments Submitted
5	Xcel Energy, Inc.	Gerry Huitt		Affirmative	N/A
6	AEP	Mathew Miller		Affirmative	N/A
6	Ameren - Ameren Services	Robert Quinlivan		Negative	Third-Party Comments
6	APS - Arizona Public Service Co.	Marcus Bortman		Negative	Comments Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
6	Arkansas Electric Cooperative Corporation	Bruce Walkup		Abstain	N/A
6	Associated Electric Cooperative, Inc.	Brian Ackermann		Affirmative	N/A
6	Austin Energy	Imane Mrini		None	N/A
6	Basin Electric Power Cooperative	Eve G Stromer		Negative	Third-Party Comments
6	Black Hills Corporation	Rachel Schuldt		Negative	Comments Submitted
6	Bonneville Power Administration	Tanner Brier		Abstain	N/A
6	Cleco Corporation	Robert Hirchak		Affirmative	N/A
6	Con Ed - Consolidated Edison Co. of New York	Jason Chandler		Affirmative	N/A
6	Constellation	Kimberly Turco		Affirmative	N/A
6	Dominion - Dominion Resources, Inc.	Sean Bodkin		Affirmative	N/A
6	Duke Energy	John Sturgeon		Negative	Comments Submitted
6	Edison International - Southern California Edison Company	Stephanie Kenny		Negative	Comments Submitted
6	Entergy	Julie Hall		Negative	Comments Submitted
6	Evergy	Tiffany Lake	Hayden Maples	Negative	Comments Submitted
6	FirstEnergy - FirstEnergy Corporation	Stacey Sheehan		Affirmative	N/A
6	Imperial Irrigation District	Diana Torres	Denise Sanchez	Affirmative	N/A
6	Invenergy LLC	Colin Chilcoat		Negative	Comments Submitted
6	Lincoln Electric System	Eric Ruskamp		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
6	Manitoba Hydro	Brandin Stoesz		Negative	Comments Submitted
6	Muscatine Power and Water	Nicholas Burns		Negative	Third-Party Comments
6	New York Power Authority	Shelly Dineen		Negative	Third-Party Comments
6	NextEra Energy - Florida Power and Light Co.	Justin Welty		Negative	Comments Submitted
6	NiSource - Northern Indiana Public Service Co.	Rebecca Blair		Affirmative	N/A
6	NRG - NRG Energy, Inc.	Martin Sidor		Affirmative	N/A
6	Omaha Public Power District	Shonda McCain		Negative	Third-Party Comments
6	Platte River Power Authority	Sabrina Martz		Negative	Third-Party Comments
6	Portland General Electric Co.	Stefanie Burke		Abstain	N/A
6	Powerex Corporation	Raj Hundal		Abstain	N/A
6	Sacramento Municipal Utility District	Charles Norton	Tim Kelley	Affirmative	N/A
6	Salt River Project	Timothy Singh	Israel Perez	Affirmative	N/A
6	Santee Cooper	Marty Watson		Negative	Comments Submitted
6	Seattle City Light	Daren Brubaker		None	N/A
6	Seminole Electric Cooperative, Inc.	Bret Galbraith		None	N/A
6	Southern Company - Southern Company Generation and Energy Marketing	Matthew O'neal		Affirmative	N/A
6	Southern Indiana Gas and Electric Co.	Kati Barr		Affirmative	N/A
6	Tennessee Valley Authority	Jeffrey Powell		Negative	Comments Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
6	WEC Energy Group, Inc.	David Boeshaar		Negative	Comments Submitted
6	Western Area Power Administration	Jennifer Neville		Affirmative	N/A
6	Xcel Energy, Inc.	Steve Szablya		Affirmative	N/A
10	Midwest Reliability Organization	Mark Flanary		Affirmative	N/A
10	New York State Reliability Council	Wesley Yeomans		Affirmative	N/A
10	ReliabilityFirst	Tremayne Brown	Greg Sorenson	Affirmative	N/A
10	SERC Reliability Corporation	Dave Krueger		Affirmative	N/A
10	Texas Reliability Entity, Inc.	Rachel Coyne		Affirmative	N/A
10	Western Electricity Coordinating Council	Steven Rueckert		Affirmative	N/A

Previous 1 Next

Showing 1 to 244 of 244 entries

BALLOT RESULTS

Comment: View Comment Results (/CommentResults/Index/356)
Ballot Name: 2024-03 Revisions to EOP-012-2 | Draft 1 Implementation Plan AB 2 OT
Voting Start Date: 12/16/2024 12:01:00 AM
Voting End Date: 12/20/2024 8:00:00 PM
Ballot Type: OT
Ballot Activity: AB
Ballot Series: 2
Total # Votes: 215
Total Ballot Pool: 240
Quorum: 89.58
Quorum Established Date: 12/20/2024 12:04:57 PM
Weighted Segment Value: 59.7

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes w/ Comment	Negative Fraction w/ Comment	Negative Votes w/o Comment	Abstain	No Vote
Segment: 1	64	1	24	0.49	25	0.51	0	7	8
Segment: 2	3	0.3	3	0.3	0	0	0	0	0
Segment: 3	53	1	20	0.526	18	0.474	0	8	7
Segment: 4	12	0.9	5	0.5	4	0.4	0	2	1
Segment: 5	61	1	22	0.458	26	0.542	0	6	7
Segment: 6	41	1	20	0.588	14	0.412	0	5	2
Segment: 7	0	0	0	0	0	0	0	0	0
Segment: 8	0	0	0	0	0	0	0	0	0

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes w/ Comment	Negative Fraction w/ Comment	Negative Votes w/o Comment	Abstain	No Vote
Segment: 9	0	0	0	0	0	0	0	0	0
Segment: 10	6	0.6	6	0.6	0	0	0	0	0
Totals:	240	5.8	100	3.463	87	2.337	0	28	25

BALLOT POOL MEMBERS

Show All entries Search: Search

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	AEP - AEP Service Corporation	Dennis Sauriol		Affirmative	N/A
1	Allete - Minnesota Power, Inc.	Hillary Creurer		Negative	Comments Submitted
1	Ameren - Ameren Services	Tamara Evey		Negative	Third-Party Comments
1	APS - Arizona Public Service Co.	Daniela Atanasovski		Affirmative	N/A
1	Associated Electric Cooperative, Inc.	Mark Riley		Affirmative	N/A
1	Avista - Avista Corporation	Mike Magruder		Negative	Comments Submitted
1	Balancing Authority of Northern California	Kevin Smith	Tim Kelley	Affirmative	N/A
1	Basin Electric Power Cooperative	David Rudolph		Negative	Third-Party Comments
1	BC Hydro and Power Authority	Adrian Andreoiu		Abstain	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Berkshire Hathaway Energy - MidAmerican Energy Co.	Terry Harbour		None	N/A
1	Black Hills Corporation	Trevor Rombough		Abstain	N/A
1	Bonneville Power Administration	Kamala Rogers-Holliday		None	N/A
1	CenterPoint Energy Houston Electric, LLC	Daniela Hammons		Abstain	N/A
1	Central Iowa Power Cooperative	Kevin Lyons		Negative	Third-Party Comments
1	City Utilities of Springfield, Missouri	Michael Bowman		Affirmative	N/A
1	Colorado Springs Utilities	Corey Walker		Negative	Third-Party Comments
1	Con Ed - Consolidated Edison Co. of New York	Dermot Smyth		Affirmative	N/A
1	Dominion - Dominion Virginia Power	Steven Belle		Affirmative	N/A
1	Duke Energy	Katherine Street		Affirmative	N/A
1	Edison International - Southern California Edison Company	Robert Blackney		Negative	Comments Submitted
1	Entergy	Brian Lindsey		Negative	Comments Submitted
1	Evergy	Kevin Frick	Hayden Maples	Negative	Comments Submitted
1	Eversource Energy	Joshua London		Abstain	N/A
1	Exelon	Daniel Gacek		Abstain	N/A
1	FirstEnergy - FirstEnergy Corporation	John Martinez		Affirmative	N/A
1	Glencoe Light and Power Commission	Terry Volkmann		Negative	Third-Party Comments
1	Great River Energy	Gordon Pietsch		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Hydro-Quebec (HQ)	Nicolas Turcotte	Chantal Mazza	Negative	Comments Submitted
1	IDACORP - Idaho Power Company	Sean Steffensen		None	N/A
1	Imperial Irrigation District	Jesus Sammy Alcaraz	Denise Sanchez	Affirmative	N/A
1	International Transmission Company Holdings Corporation	Michael Moltane	Allie Gavin	Abstain	N/A
1	KAMO Electric Cooperative	Micah Breedlove		Affirmative	N/A
1	Long Island Power Authority	Isidoro Behar		None	N/A
1	M and A Electric Power Cooperative	William Price		Affirmative	N/A
1	Manitoba Hydro	Nazra Gladu		Negative	Comments Submitted
1	MEAG Power	David Weekley	Rebika Yitna	None	N/A
1	Minnkota Power Cooperative Inc.	Theresa Allard	Nikki Carson-Marquis	Negative	Comments Submitted
1	Muscatine Power and Water	Andrew Kurriger		Negative	Third-Party Comments
1	N.W. Electric Power Cooperative, Inc.	Mark Ramsey		Affirmative	N/A
1	National Grid USA	Jacqueline Ryan		Negative	Third-Party Comments
1	NB Power Corporation	Jeffrey Streifling		Negative	Comments Submitted
1	Nebraska Public Power District	Jamison Cawley		Negative	Third-Party Comments
1	NiSource - Northern Indiana Public Service Co.	Alison Nickells		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Northeast Missouri Electric Power Cooperative	Brett Douglas		Affirmative	N/A
1	OGE Energy - Oklahoma Gas and Electric Co.	Terri Pyle		Negative	Third-Party Comments
1	Omaha Public Power District	Doug Peterchuck		Affirmative	N/A
1	OTP - Otter Tail Power Company	Charles Wicklund		Negative	Third-Party Comments
1	Platte River Power Authority	Marissa Archie		Negative	Third-Party Comments
1	PNM Resources - Public Service Company of New Mexico	Lynn Goldstein		Affirmative	N/A
1	Portland General Electric Co.	Brooke Jockin		None	N/A
1	PPL Electric Utilities Corporation	Michelle McCartney Longo		Affirmative	N/A
1	Public Utility District No. 2 of Grant County, Washington	Joanne Anderson		Abstain	N/A
1	Salt River Project	Laura Somak	Israel Perez	Affirmative	N/A
1	Santee Cooper	Chris Wagner		Negative	Comments Submitted
1	SaskPower	Wayne Guttormson		None	N/A
1	Sempra - San Diego Gas and Electric	Mohamed Derbas		Negative	Third-Party Comments
1	Southern Company - Southern Company Services, Inc.	Matt Carden		Affirmative	N/A
1	Sunflower Electric Power Corporation	Paul Mehlhaff		None	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Tacoma Public Utilities (Tacoma, WA)	John Merrell	Jennie Wike	Affirmative	N/A
1	Tennessee Valley Authority	David Plumb		Negative	Comments Submitted
1	Tri-State G and T Association, Inc.	Donna Wood		Negative	Comments Submitted
1	U.S. Bureau of Reclamation	Richard Jackson		Negative	Comments Submitted
1	Unisource - Tucson Electric Power Co.	Jessica Cordero		Affirmative	N/A
1	Xcel Energy, Inc.	Eric Barry		Affirmative	N/A
2	Electric Reliability Council of Texas, Inc.	Kennedy Meier		Affirmative	N/A
2	PJM Interconnection, L.L.C.	Thomas Foster	Elizabeth Davis	Affirmative	N/A
2	Southwest Power Pool, Inc. (RTO)	Joshua Phillips		Affirmative	N/A
3	AEP	Leshel Hutchings		Affirmative	N/A
3	Ameren - Ameren Services	David Jendras Sr	Nick Leathers	Negative	Comments Submitted
3	APS - Arizona Public Service Co.	Jessica Lopez		Affirmative	N/A
3	Arkansas Electric Cooperative Corporation	Ayslynn Mcavoy		Abstain	N/A
3	Associated Electric Cooperative, Inc.	Todd Bennett		Affirmative	N/A
3	Avista - Avista Corporation	Robert Follini		Negative	Comments Submitted
3	BC Hydro and Power Authority	Ming Jiang		Abstain	N/A
3	Berkshire Hathaway Energy - MidAmerican Energy Co.	Joseph Amato		Negative	Comments Submitted
3	Black Hills Corporation	Josh Combs		Abstain	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	Bonneville Power Administration	Ron Sporseen		Abstain	N/A
3	Buckeye Power, Inc.	Tom Schmidt	Ryan Strom	Abstain	N/A
3	Central Electric Power Cooperative (Missouri)	Adam Weber		Affirmative	N/A
3	Con Ed - Consolidated Edison Co. of New York	Lincoln Burton		Affirmative	N/A
3	CPS Energy	Juan Gomez		Abstain	N/A
3	Dominion - Dominion Virginia Power	Victoria Crider		Affirmative	N/A
3	DTE Energy - Detroit Edison Company	Marvin Johnson		Affirmative	N/A
3	Edison International - Southern California Edison Company	Romel Aquino		Negative	Comments Submitted
3	Entergy	James Keele		Negative	Comments Submitted
3	Evergy	Marcus Moor	Hayden Maples	Negative	Comments Submitted
3	Eversource Energy	Vicki O'Leary		None	N/A
3	Exelon	Kinte Whitehead		Abstain	N/A
3	FirstEnergy - FirstEnergy Corporation	Aaron Ghodooshim		Affirmative	N/A
3	Great River Energy	Michael Brytowski		Affirmative	N/A
3	KAMO Electric Cooperative	Tony Gott		Affirmative	N/A
3	M and A Electric Power Cooperative	Gary Dollins		None	N/A
3	Manitoba Hydro	Mike Smith		Negative	Comments Submitted
3	MEAG Power	Roger Brand	Rebika Yitna	None	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	MGE Energy - Madison Gas and Electric Co.	Benjamin Widder		Negative	Third-Party Comments
3	Muscatine Power and Water	Seth Shoemaker		Negative	Third-Party Comments
3	National Grid USA	Brian Shanahan		Negative	Third-Party Comments
3	New York Power Authority	Richard Machado		Negative	Third-Party Comments
3	NextEra Energy - Florida Power and Light Co.	Karen Demos		None	N/A
3	NiSource - Northern Indiana Public Service Co.	Steven Taddeucci		Affirmative	N/A
3	Northeast Missouri Electric Power Cooperative	Skyler Wiegmann		Affirmative	N/A
3	Northern California Power Agency	Michael Whitney	Mason Jones	None	N/A
3	NW Electric Power Cooperative, Inc.	Heath Henry		None	N/A
3	OGE Energy - Oklahoma Gas and Electric Co.	Donald Hargrove		Negative	Third-Party Comments
3	Omaha Public Power District	David Heins		Negative	Third-Party Comments
3	Platte River Power Authority	Richard Kiess		Negative	Third-Party Comments
3	PNM Resources - Public Service Company of New Mexico	Amy Wesselkamper		Affirmative	N/A
3	Portland General Electric Co.	Mayra Franco		Abstain	N/A
3	PPL - Louisville Gas and Electric Co.	James Frank		None	N/A
3	Sacramento Municipal Utility District	Nicole Looney	Tim Kelley	Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	Salt River Project	Mathew Weber	Israel Perez	Affirmative	N/A
3	Santee Cooper	Vicky Budreau		Negative	Comments Submitted
3	Sempra - San Diego Gas and Electric	Bryan Bennett		Negative	Third-Party Comments
3	Sho-Me Power Electric Cooperative	Jarrod Murdaugh		Affirmative	N/A
3	Southern Company - Alabama Power Company	Joel Dembowski		Affirmative	N/A
3	Southern Indiana Gas and Electric Co.	Ryan Snyder		Affirmative	N/A
3	Tacoma Public Utilities (Tacoma, WA)	John Nierenberg	Jennie Wike	Affirmative	N/A
3	Tennessee Valley Authority	Ian Grant		Negative	Comments Submitted
3	WEC Energy Group, Inc.	Christine Kane		Negative	Comments Submitted
3	Xcel Energy, Inc.	Nicholas Friebel		Affirmative	N/A
4	Alliant Energy Corporation Services, Inc.	Larry Heckert		Negative	Third-Party Comments
4	Buckeye Power, Inc.	Jason Procuniar	Ryan Strom	Abstain	N/A
4	DTE Energy	Patricia Ireland		Affirmative	N/A
4	FirstEnergy - FirstEnergy Corporation	Mark Garza		Affirmative	N/A
4	MGE Energy - Madison Gas and Electric Co.	Ray Mangiulli		Negative	Third-Party Comments
4	Northern California Power Agency	Marty Hostler		Negative	Comments Submitted
4	Sacramento Municipal Utility District	Foung Mua	Tim Kelley	Affirmative	N/A
4	Seattle City Light	Robert Jones		None	N/A
4	Tacoma Public Utilities (Tacoma, WA)	Hien Ho	Jennie Wike	Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
4	Utility Services, Inc.	Carver Powers		Affirmative	N/A
4	WEC Energy Group, Inc.	Candace Morakinyo		Negative	Comments Submitted
4	Western Power Pool	Kevin Conway		Abstain	N/A
5	AEP	Thomas Foltz		Affirmative	N/A
5	AES - AES Corporation	Ruchi Shah		Affirmative	N/A
5	Ameren - Ameren Missouri	Sam Dwyer		None	N/A
5	American Municipal Power	Amy Ritts		Affirmative	N/A
5	APS - Arizona Public Service Co.	Andrew Smith		Affirmative	N/A
5	Associated Electric Cooperative, Inc.	Chuck Booth		Affirmative	N/A
5	Basin Electric Power Cooperative	Amanda Wangler		Negative	Third-Party Comments
5	BC Hydro and Power Authority	Christine Jennings		Abstain	N/A
5	Berkshire Hathaway - NV Energy	Dwanique Spiller		Negative	Comments Submitted
5	Black Hills Corporation	Sheila Suurmeier		Abstain	N/A
5	Bonneville Power Administration	Milli Chennell		Abstain	N/A
5	Buckeye Power, Inc.	Kevin Zemanek	Ryan Strom	Abstain	N/A
5	Calpine Corporation	Whitney Wallace		Affirmative	N/A
5	Cogentrix Energy Power Management, LLC	Gerry Adamski		Affirmative	N/A
5	Colorado Springs Utilities	Jeffrey Icke		Negative	Third-Party Comments
5	Con Ed - Consolidated Edison Co. of New York	Michelle Pagano		Affirmative	N/A
5	Constellation	Alison MacKellar		None	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	Cowlitz County PUD	Deanna Carlson		None	N/A
5	Dairyland Power Cooperative	Tommy Drea		Negative	Third-Party Comments
5	DTE Energy - Detroit Edison Company	Mohamad Elhusseini		Affirmative	N/A
5	Duke Energy	Dale Goodwine		Affirmative	N/A
5	Edison International - Southern California Edison Company	Selene Willis		Negative	Comments Submitted
5	Enel Green Power	Natalie Johnson		Abstain	N/A
5	Evergy	Jeremy Harris	Hayden Maples	Negative	Comments Submitted
5	FirstEnergy - FirstEnergy Corporation	Matthew Augustin		Affirmative	N/A
5	Greybeard Compliance Services, LLC	Mike Gabriel		Negative	Third-Party Comments
5	Hydro-Quebec (HQ)	Junji Yamaguchi	Chantal Mazza	Negative	Comments Submitted
5	Imperial Irrigation District	Tino Zaragoza	Denise Sanchez	Affirmative	N/A
5	Invenergy LLC	Rhonda Jones		Affirmative	N/A
5	Lincoln Electric System	Brittany Millard		Affirmative	N/A
5	Manitoba Hydro	Kristy-Lee Young		Negative	Comments Submitted
5	Muscatine Power and Water	Chance Back		Negative	Third-Party Comments
5	National Grid USA	Robin Berry		Negative	Third-Party Comments
5	Nebraska Public Power District	Ronald Bender		Negative	Third-Party Comments
5	New York Power Authority	Zahid Qayyum		Negative	Third-Party Comments
5	NextEra Energy	Richard Vendetti		Negative	Comments Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	NRG - NRG Energy, Inc.	Patricia Lynch		Affirmative	N/A
5	OGE Energy - Oklahoma Gas and Electric Co.	Patrick Wells		Negative	Third-Party Comments
5	Oglethorpe Power Corporation	Donna Johnson		Affirmative	N/A
5	Oklahoma Municipal Power Authority	Patrick Tuttle		Affirmative	N/A
5	Omaha Public Power District	Kayleigh Wilkerson		Negative	Third-Party Comments
5	Ontario Power Generation Inc.	Constantin Chitescu		Negative	Comments Submitted
5	OTP - Otter Tail Power Company	Stacy Wahlund		Negative	Third-Party Comments
5	Pacific Gas and Electric Company	Tyler Brun	Bob Cardle	Negative	Comments Submitted
5	Platte River Power Authority	Jon Osell		Negative	Third-Party Comments
5	Portland General Electric Co.	Ryan Olson		Abstain	N/A
5	Public Utility District No. 1 of Snohomish County	Becky Burden		Negative	Comments Submitted
5	Sacramento Municipal Utility District	Ryder Couch	Tim Kelley	Affirmative	N/A
5	Santee Cooper	Carey Salisbury		Negative	Comments Submitted
5	Seminole Electric Cooperative, Inc.	Melanie Wong		None	N/A
5	Sempra - San Diego Gas and Electric	Jennifer Wright	Jennifer Lapaix	Negative	Third-Party Comments
5	Southern Company - Southern Company Generation	Leslie Burke		Affirmative	N/A
5	Southern Indiana Gas and Electric Co.	Larry Rogers		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	Tacoma Public Utilities (Tacoma, WA)	Ozan Ferrin	Jennie Wike	Affirmative	N/A
5	Talen Generation, LLC	Donald Lock		None	N/A
5	TransAlta Corporation	Ashley Scheelar		None	N/A
5	Tri-State G and T Association, Inc.	Sergio Banuelos		Negative	Comments Submitted
5	U.S. Bureau of Reclamation	Wendy Kalidass		None	N/A
5	Vistra Energy	Daniel Roethemeyer	David Vickers	Negative	Comments Submitted
5	WEC Energy Group, Inc.	Michelle Hribar		Negative	Comments Submitted
5	Xcel Energy, Inc.	Gerry Huitt		Affirmative	N/A
6	AEP	Mathew Miller		Affirmative	N/A
6	Ameren - Ameren Services	Robert Quinlivan		Negative	Third-Party Comments
6	APS - Arizona Public Service Co.	Marcus Bortman		Affirmative	N/A
6	Arkansas Electric Cooperative Corporation	Bruce Walkup		Abstain	N/A
6	Associated Electric Cooperative, Inc.	Brian Ackermann		Affirmative	N/A
6	Austin Energy	Imane Mrini		None	N/A
6	Basin Electric Power Cooperative	Eve G Stromer		Negative	Third-Party Comments
6	Black Hills Corporation	Rachel Schuldt		Abstain	N/A
6	Bonneville Power Administration	Tanner Brier		Abstain	N/A
6	Cleco Corporation	Robert Hirchak		Affirmative	N/A
6	Con Ed - Consolidated Edison Co. of New York	Jason Chandler		Affirmative	N/A
6	Constellation	Kimberly Turco		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
6	Dominion - Dominion Resources, Inc.	Sean Bodkin		Affirmative	N/A
6	Duke Energy	John Sturgeon		Affirmative	N/A
6	Edison International - Southern California Edison Company	Stephanie Kenny		Negative	Comments Submitted
6	Entergy	Julie Hall		Negative	Comments Submitted
6	Evergy	Tiffany Lake	Hayden Maples	Negative	Comments Submitted
6	FirstEnergy - FirstEnergy Corporation	Stacey Sheehan		Affirmative	N/A
6	Imperial Irrigation District	Diana Torres	Denise Sanchez	Affirmative	N/A
6	Invenergy LLC	Colin Chilcoat		Affirmative	N/A
6	Lincoln Electric System	Eric Ruskamp		Affirmative	N/A
6	Manitoba Hydro	Brandin Stoesz		Negative	Comments Submitted
6	Muscatine Power and Water	Nicholas Burns		Negative	Third-Party Comments
6	New York Power Authority	Shelly Dineen		Negative	Third-Party Comments
6	NextEra Energy - Florida Power and Light Co.	Justin Welty		Negative	Comments Submitted
6	NiSource - Northern Indiana Public Service Co.	Rebecca Blair		Affirmative	N/A
6	NRG - NRG Energy, Inc.	Martin Sidor		Affirmative	N/A
6	Omaha Public Power District	Shonda McCain		Negative	Third-Party Comments
6	Platte River Power Authority	Sabrina Martz		Negative	Third-Party Comments
6	Portland General Electric Co.	Stefanie Burke		Abstain	N/A
6	Powerex Corporation	Raj Hundal		Abstain	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
6	Sacramento Municipal Utility District	Charles Norton	Tim Kelley	Affirmative	N/A
6	Salt River Project	Timothy Singh	Israel Perez	Affirmative	N/A
6	Santee Cooper	Marty Watson		Negative	Comments Submitted
6	Seminole Electric Cooperative, Inc.	Bret Galbraith		None	N/A
6	Southern Company - Southern Company Generation and Energy Marketing	Matthew O'neal		Affirmative	N/A
6	Southern Indiana Gas and Electric Co.	Kati Barr		Affirmative	N/A
6	Tennessee Valley Authority	Jeffrey Powell		Negative	Comments Submitted
6	WEC Energy Group, Inc.	David Boeshaar		Negative	Comments Submitted
6	Western Area Power Administration	Jennifer Neville		Affirmative	N/A
6	Xcel Energy, Inc.	Steve Szablya		Affirmative	N/A
10	Midwest Reliability Organization	Mark Flanary		Affirmative	N/A
10	New York State Reliability Council	Wesley Yeomans		Affirmative	N/A
10	ReliabilityFirst	Tremayne Brown	Greg Sorenson	Affirmative	N/A
10	SERC Reliability Corporation	Dave Krueger		Affirmative	N/A
10	Texas Reliability Entity, Inc.	Rachel Coyne		Affirmative	N/A
10	Western Electricity Coordinating Council	Steven Rueckert		Affirmative	N/A

BALLOT RESULTS

Ballot Name: 2024-03 Revisions to EOP-012-2 | Non-binding Poll EOP-012-3 | Non-binding Poll AB 2 NB
Voting Start Date: 12/16/2024 12:01:00 AM
Voting End Date: 12/20/2024 8:00:00 PM
Ballot Type: NB
Ballot Activity: AB
Ballot Series: 2
Total # Votes: 198
Total Ballot Pool: 225
Quorum: 88
Quorum Established Date: 12/20/2024 11:49:44 AM
Weighted Segment Value: 48.1

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes	Negative Fraction	Abstain	No Vote
Segment: 1	60	1	20	0.465	23	0.535	8	9
Segment: 2	3	0.1	0	0	1	0.1	2	0
Segment: 3	52	1	17	0.486	18	0.514	10	7
Segment: 4	11	0.9	5	0.5	4	0.4	2	0
Segment: 5	58	1	14	0.359	25	0.641	11	8
Segment: 6	35	1	14	0.56	11	0.44	7	3
Segment: 7	0	0	0	0	0	0	0	0
Segment: 8	0	0	0	0	0	0	0	0
Segment: 9	0	0	0	0	0	0	0	0

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes	Negative Fraction	Abstain	No Vote
Segment: 10	6	0.6	6	0.6	0	0	0	0
Totals:	225	5.6	76	2.97	82	2.63	40	27

BALLOT POOL MEMBERS

Show All entries Search: Search

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	AEP - AEP Service Corporation	Dennis Sauriol		Affirmative	N/A
1	Allete - Minnesota Power, Inc.	Hillary Creurer		Negative	No Comment Submitted
1	Ameren - Ameren Services	Tamara Evey		Abstain	N/A
1	APS - Arizona Public Service Co.	Daniela Atanasovski		Negative	No Comment Submitted
1	Associated Electric Cooperative, Inc.	Mark Riley		Affirmative	N/A
1	Avista - Avista Corporation	Mike Magruder		Negative	No Comment Submitted
1	Balancing Authority of Northern California	Kevin Smith	Tim Kelley	Affirmative	N/A
1	Basin Electric Power Cooperative	David Rudolph		Negative	No Comment Submitted
1	BC Hydro and Power Authority	Adrian Andreoiu		Abstain	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Berkshire Hathaway Energy - MidAmerican Energy Co.	Terry Harbour		None	N/A
1	Black Hills Corporation	Trevor Rombough		Negative	No Comment Submitted
1	Bonneville Power Administration	Kamala Rogers-Holliday		None	N/A
1	CenterPoint Energy Houston Electric, LLC	Daniela Hammons		Affirmative	N/A
1	Central Iowa Power Cooperative	Kevin Lyons		Negative	No Comment Submitted
1	City Utilities of Springfield, Missouri	Michael Bowman		Affirmative	N/A
1	Colorado Springs Utilities	Corey Walker		Negative	No Comment Submitted
1	Con Ed - Consolidated Edison Co. of New York	Dermot Smyth		Affirmative	N/A
1	Dominion - Dominion Virginia Power	Steven Belle		Affirmative	N/A
1	Duke Energy	Katherine Street		Affirmative	N/A
1	Edison International - Southern California Edison Company	Robert Blackney		Negative	No Comment Submitted
1	Entergy	Brian Lindsey		Negative	No Comment Submitted
1	Evergy	Kevin Frick	Hayden Maples	Negative	No Comment Submitted
1	Eversource Energy	Joshua London		Abstain	N/A
1	Exelon	Daniel Gacek		Abstain	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	FirstEnergy - FirstEnergy Corporation	John Martinez		Affirmative	N/A
1	Glencoe Light and Power Commission	Terry Volkmann		Negative	No Comment Submitted
1	Great River Energy	Gordon Pietsch		Affirmative	N/A
1	Hydro-Quebec (HQ)	Nicolas Turcotte	Chantal Mazza	Negative	No Comment Submitted
1	IDACORP - Idaho Power Company	Sean Steffensen		None	N/A
1	Imperial Irrigation District	Jesus Sammy Alcaraz	Denise Sanchez	Affirmative	N/A
1	International Transmission Company Holdings Corporation	Michael Moltane	Allie Gavin	Abstain	N/A
1	KAMO Electric Cooperative	Micah Breedlove		Affirmative	N/A
1	Long Island Power Authority	Isidoro Behar		None	N/A
1	M and A Electric Power Cooperative	William Price		Affirmative	N/A
1	MEAG Power	David Weekley	Rebika Yitna	None	N/A
1	Minnkota Power Cooperative Inc.	Theresa Allard	Nikki Carson-Marquis	Negative	No Comment Submitted
1	Muscatine Power and Water	Andrew Kurriger		Negative	No Comment Submitted
1	N.W. Electric Power Cooperative, Inc.	Mark Ramsey		Affirmative	N/A
1	National Grid USA	Jacqueline Ryan		Negative	No Comment Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	NB Power Corporation	Jeffrey Streifling		Negative	No Comment Submitted
1	Nebraska Public Power District	Jamison Cawley		Abstain	N/A
1	NiSource - Northern Indiana Public Service Co.	Alison Nickells		Affirmative	N/A
1	Northeast Missouri Electric Power Cooperative	Brett Douglas		Affirmative	N/A
1	OGE Energy - Oklahoma Gas and Electric Co.	Terri Pyle		Negative	No Comment Submitted
1	Omaha Public Power District	Doug Peterchuck		Negative	No Comment Submitted
1	Platte River Power Authority	Marissa Archie		Negative	No Comment Submitted
1	PNM Resources - Public Service Company of New Mexico	Lynn Goldstein		Negative	No Comment Submitted
1	Portland General Electric Co.	Brooke Jockin		None	N/A
1	PPL Electric Utilities Corporation	Michelle McCartney Longo		None	N/A
1	Salt River Project	Laura Somak	Israel Perez	Affirmative	N/A
1	Santee Cooper	Chris Wagner		Abstain	N/A
1	SaskPower	Wayne Guttormson		None	N/A
1	Sempra - San Diego Gas and Electric	Mohamed Derbas		Negative	No Comment Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
1	Southern Company - Southern Company Services, Inc.	Matt Carden		Affirmative	N/A
1	Sunflower Electric Power Corporation	Paul Mehlhaff		None	N/A
1	Tacoma Public Utilities (Tacoma, WA)	John Merrell	Jennie Wike	Affirmative	N/A
1	Tennessee Valley Authority	David Plumb		Abstain	N/A
1	Tri-State G and T Association, Inc.	Donna Wood		Negative	No Comment Submitted
1	U.S. Bureau of Reclamation	Richard Jackson		Negative	No Comment Submitted
1	Unisource - Tucson Electric Power Co.	Jessica Cordero		Affirmative	N/A
2	Electric Reliability Council of Texas, Inc.	Kennedy Meier		Negative	No Comment Submitted
2	PJM Interconnection, L.L.C.	Thomas Foster	Elizabeth Davis	Abstain	N/A
2	Southwest Power Pool, Inc. (RTO)	Joshua Phillips		Abstain	N/A
3	AEP	Leshel Hutchings		Affirmative	N/A
3	Ameren - Ameren Services	David Jendras Sr	Nick Leathers	Abstain	N/A
3	APS - Arizona Public Service Co.	Jessica Lopez		Negative	No Comment Submitted
3	Arkansas Electric Cooperative Corporation	Ayslynn Mcavoy		Abstain	N/A
3	Associated Electric Cooperative, Inc.	Todd Bennett		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	Avista - Avista Corporation	Robert Follini		Negative	No Comment Submitted
3	BC Hydro and Power Authority	Ming Jiang		Abstain	N/A
3	Berkshire Hathaway Energy - MidAmerican Energy Co.	Joseph Amato		Negative	No Comment Submitted
3	Black Hills Corporation	Josh Combs		Negative	No Comment Submitted
3	Bonneville Power Administration	Ron Sporseen		Abstain	N/A
3	Buckeye Power, Inc.	Tom Schmidt	Ryan Strom	Abstain	N/A
3	Central Electric Power Cooperative (Missouri)	Adam Weber		Affirmative	N/A
3	Con Ed - Consolidated Edison Co. of New York	Lincoln Burton		Affirmative	N/A
3	CPS Energy	Juan Gomez		Abstain	N/A
3	Dominion - Dominion Virginia Power	Victoria Crider		Affirmative	N/A
3	DTE Energy - Detroit Edison Company	Marvin Johnson		Affirmative	N/A
3	Edison International - Southern California Edison Company	Romel Aquino		Negative	No Comment Submitted
3	Entergy	James Keele		Negative	No Comment Submitted
3	Evergy	Marcus Moor	Hayden Maples	Negative	No Comment Submitted
3	Eversource Energy	Vicki O'Leary		None	N/A
3	Exelon	Kinte Whitehead		Abstain	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	FirstEnergy - FirstEnergy Corporation	Aaron Ghodooshim		Affirmative	N/A
3	Great River Energy	Michael Brytowski		Affirmative	N/A
3	KAMO Electric Cooperative	Tony Gott		Affirmative	N/A
3	M and A Electric Power Cooperative	Gary Dollins		None	N/A
3	MEAG Power	Roger Brand	Rebika Yitna	None	N/A
3	MGE Energy - Madison Gas and Electric Co.	Benjamin Widder		Negative	No Comment Submitted
3	Muscatine Power and Water	Seth Shoemaker		Negative	No Comment Submitted
3	National Grid USA	Brian Shanahan		Negative	No Comment Submitted
3	New York Power Authority	Richard Machado		Negative	No Comment Submitted
3	NextEra Energy - Florida Power and Light Co.	Karen Demos		None	N/A
3	NiSource - Northern Indiana Public Service Co.	Steven Taddeucci		Affirmative	N/A
3	Northeast Missouri Electric Power Cooperative	Skyler Wiegmann		Affirmative	N/A
3	Northern California Power Agency	Michael Whitney	Mason Jones	None	N/A
3	NW Electric Power Cooperative, Inc.	Heath Henry		None	N/A
3	OGE Energy - Oklahoma Gas and Electric Co.	Donald Hargrove		Negative	No Comment Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	Omaha Public Power District	David Heins		Negative	No Comment Submitted
3	OTP - Otter Tail Power Company	Wendi Olson		Negative	No Comment Submitted
3	Platte River Power Authority	Richard Kiess		Negative	No Comment Submitted
3	PNM Resources - Public Service Company of New Mexico	Amy Wesselkamper		Negative	No Comment Submitted
3	Portland General Electric Co.	Mayra Franco		Abstain	N/A
3	PPL - Louisville Gas and Electric Co.	James Frank		None	N/A
3	Sacramento Municipal Utility District	Nicole Looney	Tim Kelley	Affirmative	N/A
3	Salt River Project	Mathew Weber	Israel Perez	Affirmative	N/A
3	Santee Cooper	Vicky Budreau		Abstain	N/A
3	Sempra - San Diego Gas and Electric	Bryan Bennett		Negative	No Comment Submitted
3	Sho-Me Power Electric Cooperative	Jarrod Murdaugh		Affirmative	N/A
3	Southern Company - Alabama Power Company	Joel Dembowski		Affirmative	N/A
3	Southern Indiana Gas and Electric Co.	Ryan Snyder		Affirmative	N/A
3	Tacoma Public Utilities (Tacoma, WA)	John Nierenberg	Jennie Wike	Affirmative	N/A
3	Tennessee Valley Authority	Ian Grant		Abstain	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
3	WEC Energy Group, Inc.	Christine Kane		Negative	No Comment Submitted
4	Alliant Energy Corporation Services, Inc.	Larry Heckert		Negative	No Comment Submitted
4	Buckeye Power, Inc.	Jason Procuniar	Ryan Strom	Abstain	N/A
4	DTE Energy	Patricia Ireland		Affirmative	N/A
4	FirstEnergy - FirstEnergy Corporation	Mark Garza		Affirmative	N/A
4	MGE Energy - Madison Gas and Electric Co.	Ray Mangiulli		Negative	No Comment Submitted
4	Northern California Power Agency	Marty Hostler		Negative	No Comment Submitted
4	Sacramento Municipal Utility District	Foung Mua	Tim Kelley	Affirmative	N/A
4	Tacoma Public Utilities (Tacoma, WA)	Hien Ho	Jennie Wike	Affirmative	N/A
4	Utility Services, Inc.	Carver Powers		Affirmative	N/A
4	WEC Energy Group, Inc.	Candace Morakinyo		Negative	No Comment Submitted
4	Western Power Pool	Kevin Conway		Abstain	N/A
5	AEP	Thomas Foltz		Affirmative	N/A
5	AES - AES Corporation	Ruchi Shah		Negative	No Comment Submitted
5	Ameren - Ameren Missouri	Sam Dwyer		None	N/A
5	APS - Arizona Public Service Co.	Andrew Smith		Negative	No Comment Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	Associated Electric Cooperative, Inc.	Chuck Booth		Affirmative	N/A
5	Basin Electric Power Cooperative	Amanda Wangler		Negative	No Comment Submitted
5	BC Hydro and Power Authority	Christine Jennings		Abstain	N/A
5	Berkshire Hathaway - NV Energy	Dwanique Spiller		Negative	No Comment Submitted
5	Black Hills Corporation	Sheila Suurmeier		Negative	No Comment Submitted
5	Bonneville Power Administration	Milli Chennell		Abstain	N/A
5	Buckeye Power, Inc.	Kevin Zemanek	Ryan Strom	Abstain	N/A
5	Calpine Corporation	Whitney Wallace		Affirmative	N/A
5	Cogentrix Energy Power Management, LLC	Gerry Adamski		Abstain	N/A
5	Colorado Springs Utilities	Jeffrey Icke		Negative	No Comment Submitted
5	Con Ed - Consolidated Edison Co. of New York	Michelle Pagano		Affirmative	N/A
5	Constellation	Alison MacKellar		None	N/A
5	Cowlitz County PUD	Deanna Carlson		None	N/A
5	Dairyland Power Cooperative	Tommy Drea		Negative	No Comment Submitted
5	DTE Energy - Detroit Edison Company	Mohamad Elhusseini		Affirmative	N/A
5	Duke Energy	Dale Goodwine		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	Edison International - Southern California Edison Company	Selene Willis		Negative	No Comment Submitted
5	Enel Green Power	Natalie Johnson		Abstain	N/A
5	Evergy	Jeremy Harris	Hayden Maples	Negative	No Comment Submitted
5	FirstEnergy - FirstEnergy Corporation	Matthew Augustin		Affirmative	N/A
5	Greybeard Compliance Services, LLC	Mike Gabriel		Negative	No Comment Submitted
5	Hydro-Quebec (HQ)	Junji Yamaguchi	Chantal Mazza	Negative	No Comment Submitted
5	Imperial Irrigation District	Tino Zaragoza	Denise Sanchez	Affirmative	N/A
5	Invenergy LLC	Rhonda Jones		None	N/A
5	Lincoln Electric System	Brittany Millard		Abstain	N/A
5	Muscatine Power and Water	Chance Back		Negative	No Comment Submitted
5	National Grid USA	Robin Berry		Negative	No Comment Submitted
5	Nebraska Public Power District	Ronald Bender		Abstain	N/A
5	New York Power Authority	Zahid Qayyum		Negative	No Comment Submitted
5	NextEra Energy	Richard Vendetti		Negative	No Comment Submitted
5	NRG - NRG Energy, Inc.	Patricia Lynch		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	OGE Energy - Oklahoma Gas and Electric Co.	Patrick Wells		Negative	No Comment Submitted
5	Oglethorpe Power Corporation	Donna Johnson		Affirmative	N/A
5	Oklahoma Municipal Power Authority	Patrick Tuttle		Abstain	N/A
5	Omaha Public Power District	Kayleigh Wilkerson		Negative	No Comment Submitted
5	Ontario Power Generation Inc.	Constantin Chitescu		Negative	No Comment Submitted
5	OTP - Otter Tail Power Company	Stacy Wahlund		Negative	No Comment Submitted
5	Pacific Gas and Electric Company	Tyler Brun	Bob Cardle	Negative	No Comment Submitted
5	Platte River Power Authority	Jon Osell		Negative	No Comment Submitted
5	Portland General Electric Co.	Ryan Olson		Abstain	N/A
5	Public Utility District No. 1 of Snohomish County	Becky Burden		Negative	No Comment Submitted
5	Sacramento Municipal Utility District	Ryder Couch	Tim Kelley	Affirmative	N/A
5	Santee Cooper	Carey Salisbury		Abstain	N/A
5	Seminole Electric Cooperative, Inc.	Melanie Wong		None	N/A
5	Sempra - San Diego Gas and Electric	Jennifer Wright	Jennifer Lapaix	Negative	No Comment Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
5	Southern Company - Southern Company Generation	Leslie Burke		Affirmative	N/A
5	Southern Indiana Gas and Electric Co.	Larry Rogers		Affirmative	N/A
5	Tacoma Public Utilities (Tacoma, WA)	Ozan Ferrin	Jennie Wike	Affirmative	N/A
5	Tennessee Valley Authority	Darren Boehm		None	N/A
5	TransAlta Corporation	Ashley Scheelar		None	N/A
5	Tri-State G and T Association, Inc.	Sergio Banuelos		Negative	No Comment Submitted
5	U.S. Bureau of Reclamation	Wendy Kalidass		None	N/A
5	WEC Energy Group, Inc.	Michelle Hribar		Negative	No Comment Submitted
5	Xcel Energy, Inc.	Gerry Huitt		Abstain	N/A
6	AEP	Mathew Miller		Affirmative	N/A
6	Ameren - Ameren Services	Robert Quinlivan		Abstain	N/A
6	APS - Arizona Public Service Co.	Marcus Bortman		Negative	No Comment Submitted
6	Arkansas Electric Cooperative Corporation	Bruce Walkup		Abstain	N/A
6	Associated Electric Cooperative, Inc.	Brian Ackermann		Affirmative	N/A
6	Austin Energy	Imane Mrini		None	N/A
6	Black Hills Corporation	Rachel Schuldt		Negative	No Comment Submitted

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
6	Bonneville Power Administration	Tanner Brier		Abstain	N/A
6	Con Ed - Consolidated Edison Co. of New York	Jason Chandler		Affirmative	N/A
6	Constellation	Kimberly Turco		Affirmative	N/A
6	Dominion - Dominion Resources, Inc.	Sean Bodkin		Affirmative	N/A
6	Duke Energy	John Sturgeon		Affirmative	N/A
6	Edison International - Southern California Edison Company	Stephanie Kenny		Negative	No Comment Submitted
6	Entergy	Julie Hall		Negative	No Comment Submitted
6	Evergy	Tiffany Lake	Hayden Maples	Negative	No Comment Submitted
6	FirstEnergy - FirstEnergy Corporation	Stacey Sheehan		Affirmative	N/A
6	Imperial Irrigation District	Diana Torres	Denise Sanchez	Affirmative	N/A
6	Lincoln Electric System	Eric Ruskamp		Abstain	N/A
6	Muscatine Power and Water	Nicholas Burns		Negative	No Comment Submitted
6	New York Power Authority	Shelly Dineen		Negative	No Comment Submitted
6	NextEra Energy - Florida Power and Light Co.	Justin Welty		Negative	No Comment Submitted
6	NiSource - Northern Indiana Public Service Co.	Rebecca Blair		Affirmative	N/A
6	NRG - NRG Energy, Inc.	Martin Sidor		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
6	Omaha Public Power District	Shonda McCain		Negative	No Comment Submitted
6	Platte River Power Authority	Sabrina Martz		Negative	No Comment Submitted
6	Powerex Corporation	Raj Hundal		Abstain	N/A
6	Sacramento Municipal Utility District	Charles Norton	Tim Kelley	Affirmative	N/A
6	Salt River Project	Timothy Singh	Israel Perez	Affirmative	N/A
6	Santee Cooper	Marty Watson		Abstain	N/A
6	Seminole Electric Cooperative, Inc.	Bret Galbraith		None	N/A
6	Southern Company - Southern Company Generation and Energy Marketing	Matthew O'neal		Affirmative	N/A
6	Southern Indiana Gas and Electric Co.	Kati Barr		Affirmative	N/A
6	Tennessee Valley Authority	Jeffrey Powell		None	N/A
6	WEC Energy Group, Inc.	David Boeshaar		Negative	No Comment Submitted
6	Western Area Power Administration	Jennifer Neville		Abstain	N/A
10	Midwest Reliability Organization	Mark Flanary		Affirmative	N/A
10	New York State Reliability Council	Wesley Yeomans		Affirmative	N/A
10	ReliabilityFirst	Tremayne Brown	Greg Sorenson	Affirmative	N/A
10	SERC Reliability Corporation	Dave Krueger		Affirmative	N/A

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
10	Texas Reliability Entity, Inc.	Rachel Coyne		Affirmative	N/A
10	Western Electricity Coordinating Council	Steven Rueckert		Affirmative	N/A

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Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

This is the third draft of the proposed standard for a 45-day comment period.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	July 17, 2024
SAR posted for comment	July 18, 2024 – August 16, 2024
20-day formal comment period with initial ballot	October 17, 2024 – November 5, 2024

Anticipated Actions	Date
18-day formal comment period with additional ballot	December 3, 2024 – December 20, 2024
45-day comment period	January 27, 2025 – March 12, 2025
Board adoption	March, 2025

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.

Previously Approved Terms

This section includes previously approved terms from EOP-012-1 and EOP-012-2. It is included to help with drafting and the posting of EOP-012-3.

Extreme Cold Weather Temperature – The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 01/01/2000 through the date the temperature is calculated.

Generator Cold Weather Critical Component – Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

Fixed Fuel Supply Component – Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

A. Introduction

1. **Title:** Extreme Cold Weather Preparedness and Operations

2. **Number:** EOP-012-3

3. **Purpose:** To address the effects of operating in extreme cold weather by ensuring each Generator Owner has developed and implemented plan(s) to mitigate the reliability impacts of extreme cold weather on its applicable generating units.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Generator Owner

   4.1.2. Generator Operator

   4.2. Facilities:

   4.2.1. Bulk Electric System (BES) generating units. For purposes of this standard, the term "generating unit" subject to these requirements refers to the following Bulk Electric System (BES) resources:

   4.2.1.1. A Bulk Electric System generating resource identified in the BES definition, Inclusion I2 and I4; or

   4.2.1.2. A Blackstart Resource, identified in the BES definition, Inclusion I3.

5. **Effective Date:** See Implementation Plan for Project 2024-03.

B. Requirements and Measures

R1. At least once every five calendar years, each Generator Owner shall, for each of its applicable generating unit(s): [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]

1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable generating unit(s) and identify the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, if necessary; and

1.1.1. If the recalculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation, and if new corrective actions are needed to provide the required operational capability described in Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) calendar months of the recalculation.

1.2. Identify generating unit(s) cold weather data, to include:

1.2.1. Generating unit(s) operating limitations in cold weather to include:

1.2.1.1. Capability and availability;

1.2.1.2. Fuel supply and inventory concerns;

1.2.1.3. Start-up issues;

1.2.1.4. Fuel switching capabilities; and

1.2.1.5. Environmental constraints.

1.2.2. Generating unit(s) minimum:

- Design temperature, and if available, the concurrent wind speed and precipitation;
- Historical operating temperature at least one hour in duration, and if available, the concurrent wind speed and precipitation; or
- Current cold weather performance temperature determined by an engineering analysis, which includes the concurrent wind speed and precipitation.

M1. Each Generator Owner will have evidence documenting its Extreme Cold Weather Temperature calculation, including the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, and design information, operating data, or engineering analysis that supports its generating unit minimum temperature.

R2. Applicable to generating units that begin commercial operation[1] on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[2] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

2.1 For generating units for which the Generator Owner first contractually committed to design criteria[3] relevant to this Requirement before June 29, 2023[4] and which enter commercial operation between October 1, 2027 and March 31, 2028:

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or
- Develop, implement, and complete by April 1, 2028, a Corrective Action Plan to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or
- Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

2.2 For generating units for which the Generator Owner first contractually committed to design criteria[5] relevant to this Requirement on or after June 29, 2023[6]:

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[1] Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing.

[2] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[3] Such commitments would be demonstrated by signed contracts creating a binding legal agreement with respect to the design criteria for the unit.

[4] In non-U.S. jurisdictions, use the date the applicable government authority in the relevant jurisdiction approved the first version of the EOP-012 Reliability Standard and the definition of Extreme Cold Weather Temperature.

[5] Such commitments would be demonstrated by signed contracts creating a binding legal agreement with respect to the design criteria for the unit.

[6] In non-U.S. jurisdictions, use the date the applicable government authority in the relevant jurisdiction approved the first version of the EOP-012 Reliability Standard and the definition of Extreme Cold Weather Temperature.

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or
- Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R2, or it has developed, implemented, and completed by April 1, 2028, a Corrective Action Plan, or it has declared a Generator Cold Weather Constraint for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature under Requirement R1 Part 1.2.2 which is equal to or less than the generating unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, Corrective Action Plan(s) (if applicable), and Generator Cold Weather Constraints (if applicable).

R3. Applicable to generating unit(s) in commercial operation prior to October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[7] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature; or
- Develop a Corrective Action Plan to add new or modify existing freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature.

M3. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R3, or it has developed a Corrective Action Plan for the identified issues. Acceptable evidence may include, but is not limited to, the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature per Part 1.2.2 which is

[7] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and Corrective Action Plan(s).

R4. Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness plan(s) shall include the following, at a minimum: *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. The lowest calculated Extreme Cold Weather Temperature for each generating unit, as determined in Requirement R1;[8]

4.2. The generating unit cold weather data, as determined in Requirement R1, Part 1.2;

4.3. Documentation identifying Generator Cold Weather Critical Components;

4.4. Documentation of freeze protection measures implemented on Generator Cold Weather Critical Components that includes measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain); and

4.5. Annual inspection and maintenance of generating unit(s) freeze protection measures implemented on Generator Cold Weather Critical Components.

M4. Each Generator Owner will have evidence documenting that its cold weather preparedness plan(s) was implemented and maintained in accordance with Requirement R4. Examples of documentation to demonstrate a cold weather preparedness plan may include existing operating procedures, plans, checklists, or processes. Examples of documentation, to demonstrate inspections and maintenance have been completed, may include, but are not limited to, completed work order(s) from the Generator Owner's work management system and/or freeze protection checklists identifying the measures inspected and maintained for the Generator Cold Weather Critical Components.

R5. Each Generator Owner, in conjunction with its Generator Operator, shall identify the entity responsible for providing generating unit-specific training, and that identified entity shall provide annual training to the maintenance and operations personnel, as applicable, responsible for implementing the cold weather preparedness plan(s) developed pursuant to Requirement R4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*

M5. Each Generator Operator or Generator Owner will have documented evidence that the applicable personnel completed annual training of the Generator Owner's cold weather preparedness plan(s). This evidence may include, but is not limited to,

[8] Generator Owners shall include the lowest calculated Extreme Cold Weather Temperature for the unit, even where subsequent periodic re-calculations under Requirement R1 Part 1.1 cause an increase in the Extreme Cold Weather Temperature.

documents such as personnel training records, training materials, date of training, agendas or learning objectives, attendance at pre-work briefings, review of work order tasks, tailboards, attendance logs for classroom training, and completion records for computer-based training in fulfillment of Requirement R5.

R6. Each Generator Owner shall, after experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[9] develop and implement[10] a Corrective Action Plan(s) to address identified freezing issues as follows: *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

6.1. The Generator Owner shall develop a Corrective Action Plan for the generating unit that experienced a Generator Cold Weather Reliability Event no later than prior to the first day of the first December following the Generator Cold Weather Reliability Event.[11]

6.2. The Generator Owner shall conduct a review of other generating unit(s) in its fleet with the same or similar equipment as the affected generating unit to determine if any of those generating unit(s) are susceptible to the identified freezing issues. If corrective actions are needed, the Generator Owner shall develop or update a Corrective Action Plan to address the other generating unit(s). This review and, if applicable, the development or update of any Corrective Action Plan(s), shall be completed no later than 12 calendar months following the Generator Cold Weather Reliability Event.

6.3. For each Corrective Action Plan, the Generator Owner shall include at a minimum:

6.3.1. A summary of the identified cause(s) of the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;

6.3.2. A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures;

6.3.3. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply

[9] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[10] If a Generator Owner has previously experienced a Generator Cold Weather Reliability Event and developed a Corrective Action Plan for the generating unit or units under Requirement R6 Parts 6.1 or 6.2, the Generator Owner may review and update its existing plan(s) in lieu of developing a new plan.

[11] For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year.

until implementation of the corrective action(s) identified in the Corrective Action Plan is completed;

6.3.4. A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required; and

6.3.5. A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows:

6.3.5.1. For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.[12]

6.3.5.2. For other generating unit(s) owned by the Generator Owner, within 24 calendar months of completing the review required in Part 6.2, or no later than 36 months following the Generator Cold Weather Reliability Event.

6.4 If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval. The submitted Corrective Action Plan extension request shall include the following:

6.4.1. An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner;

6.4.2. Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and

6.4.3. Updated timetable for implementing the selected actions in Part 6.3.2.

6.5 The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, as applicable.

M6. Each Generator Owner will have dated evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event for applicable unit(s) in accordance with Requirement R6. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraint(s).

[12] For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year.

R7. Each Generator Owner that is required to develop a Corrective Action Plan under Requirements R1, R3, or R9 shall develop and implement the Corrective Action Plan in accordance with the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

7.1. For each Corrective Action Plan, the Generator Owner shall include at a minimum the following:

7.1.1. A list of any actions that require new freeze protection measures, with a timetable specifying completion of such measures within 48 calendar months of completing development of the Corrective Action Plan;

7.1.2. A list of any actions that remedy issues with existing freeze protection measures with a timetable specifying completion of such measures within 24 calendar months of completing development of the Corrective Action Plan (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures);

7.1.3. A description of updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; and

7.1.4. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed.

7.2. If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R7 Part 7.1 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following:

7.2.1. An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.2.2. Revisions to the selected actions in Parts 7.1, if any, including utilization of operating procedures, if applicable; and

7.2.3. Updated timetable for implementing the selected actions in Part 7.1.

7.3. The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8.

M7. Each Generator Owner shall have dated evidence that it developed and implemented a Corrective Action Plan for applicable unit(s) in accordance with Requirement R7. Acceptable evidence may include, but is not limited to, the following dated

documentation (electronic or hardcopy format): Corrective Action Plan(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraints.

R8. Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

8.1. Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows:

- For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or
- For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable.

8.2. Update the operating limitations under Requirement R1 Part R1.2 if applicable;

8.3. If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2; and

8.4. Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event, the cause of Generator Cold Weather Reliability Event is the same as that of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause of the more recent Generator Cold Weather Reliability Event are addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit.

M8. Each Generator Owner shall have dated evidence that demonstrates it performed the actions in accordance with Requirement R8. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): a copy of the Generator Cold Weather Constraint declaration, evidence the declaration was provided to the Compliance Enforcement Authority in accordance with the specified timeframe, records that document update(s) to the operating limitations, as needed, updates to the Corrective Action Plan(s), if applicable, and documentation and notice to the CEA of subsequent Generator Cold Weather Reliability Events, if applicable.

R9. The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

9.1 If a Generator Cold Weather Constraint is determined to be no longer valid, then within six (6) calendar months of such determination, the Generator Owner shall develop or update a Corrective Action Plan pursuant to Requirement R7.

M9. Each Generator Owner shall have dated evidence that demonstrates it reviewed Generator Cold Weather Constraints in accordance with Requirement R9. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the performance of the review within the required timeframe, records that demonstrate that a Corrective Action Plan was developed or updated within the required timeframe (if applicable).

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" (CEA) means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation.

- The Generator Owner shall retain data or evidence to support its current Extreme Cold Weather Temperature calculation and generating unit cold weather data, plus each calculation or revision since the last audit, for Requirement R1 and Measure M1.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R2 or R3 is complete, whichever timeframe is greater, for Requirements R2 and R3 and Measures M2 and M3. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall retain the current cold weather preparedness plan(s), as evidence of review or revision history, plus each version issued since the last audit and evidence of compliance since the last audit for Requirement R4 and Measure M4.
- The Generator Owner or Generator Operator shall keep data or evidence to show compliance for three years for Requirement R5 and Measure M5.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extensions (if applicable), under Requirement R6 is complete, whichever timeframe is greater, for Requirement R6 and Measure M6. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extension (if applicable), under Requirement R7 is complete, whichever timeframe is

greater, for Requirement R7 and Measure M7. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.

- The Generator Owner shall maintain data or evidence to support its current Generator Cold Weather Constraint declaration(s), plus each revision since the last audit, for Requirement R8 and Measure M8.
- The Generator Owner shall maintain data or evidence to support that it reviewed each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months since the last audit, for Requirement R9 and Measure M9.

1.3. Compliance Monitoring and Enforcement Program: "Compliance Monitoring Enforcement Program" or "CMEP" means, depending on the context (1) the NERC Compliance Monitoring and Enforcement Program (Appendix 4C to the NERC Rules of Procedure) or the Commission-approved program of a Regional Entity, as applicable, or (2) the program, department or organization within NERC or a Regional Entity that is responsible for performing compliance monitoring and enforcement activities with respect to Registered Entities' compliance with Reliability Standards.

1.4. Compliance Abeyance Period: From the effective date of Reliability Standard EOP-012-3 until October 1, 2027, the Compliance Enforcement Authority will not pursue an action under Sections 4A.0 or 5.0 of Appendix 4C to the Rules of Procedure for a failure to comply with Reliability Standard EOP-012-3 Requirement R1 Part 1.1 with respect to the calculation of the Extreme Cold Weather Temperature for an applicable generating unit, or any other failure to comply resulting from an incorrect calculation of the Extreme Cold Weather Temperature for that generating unit, against any entity acting in good faith to comply with the standard in accordance with the relevant implementation plan. "Good faith" in this context refers to a sincere intention to comply with Reliability Standard EOP-012-3, regarding all requirements based on the calculation of the Extreme Cold Weather Temperature for each applicable generating unit, following a reasonable and serious assessment by the entity in determining how this Reliability Standard should be applied to its particular facts and circumstances. Entities shall participate in any compliance monitoring activities undertaken by the Compliance Enforcement Authority during this abeyance period and submit documentation as requested.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.
R2.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.
R3.	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	measure(s) meeting the criteria in Requirement R3 for 5% or less of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for 5% or less of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 20% of its applicable units.
R4.	The Generator Owner implemented a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable parts within Requirement R4.	The Generator Owner maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.
R5.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	described in Requirement R5 to the greater of: • one applicable personnel for a single generating unit; or • 5% or less of its total applicable personnel.	described in Requirement R5 to the greater of: • two applicable personnel for a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	described in Requirement R5 to the greater of: • three applicable personnel for a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	described in Requirement R5 to the greater of: • four or more applicable personnel for a single generating unit; or • more than 15% of its total applicable personnel.
R6.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 12 but fewer than 15 calendar months after the Generator Cold Weather Reliability Event.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 15 but fewer than 18 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirement R6, but it failed to contain one	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 18 but fewer than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirements R6, but it failed to contain two	The Generator Owner failed to develop a Corrective Action Plan where required under Requirement R6. OR The Generator Owner developed a Corrective Action Plan where required under Requirement R6, but failed to implement it. OR The Generator Owner failed to conduct a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, or the Generator

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		of the elements in Requirement R6, Part 6.3.	of the elements in Requirement R6, Part 6.3. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable), but it did not include one of the required elements.	Owner conducted the review, but it was conducted more than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan, but failed to contain three or more of the elements in Requirement R6, Part 6.3. OR The Generator Owner exceeded the timetables specified for completion in Requirement R6, Part 6.3.5, but did not submit a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable). OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.4 (if applicable), but it did not

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				include two or more of the elements in Requirement R6, Part 6.4. OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s), in accordance with Requirement R6, Part 6.5.
R7.	N/A	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include a description of updates to the cold weather preparedness plan and identification of operating limits as required in Requirement R7, Parts 7.1.3 and 7.1.4.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include one of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include two or more of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
			it did not include one of the required elements.	it did not include two or more of the required elements. OR The Generator Owner failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable). OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) in accordance with Requirement R7 Part 7.3.
R8.	The Generator Owner declared a Generator Cold Weather Constraint and submitted it to the Compliance Enforcement Authority but it did not do so within the	The Generator Owner declared a Generator Cold Weather Constraint, but failed to update its operating limitations as required under Requirement R8, Part 8.2 (if applicable).	The Generator Owner declared a Cold Weather Constraint, but failed to update its Corrective Action Plan following a determination by the Compliance Enforcement Authority that the constraint is invalid in	The Generator Owner declared a Generator Cold Weather Constraint but failed to submit it to the Compliance Enforcement Authority. OR

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	timeframe provided in Requirement R8 Part 8.1.		accordance with Requirement R8 Part 8.3 (as applicable). OR The Generator Owner failed to document and provide the required notice to the CEA under Requirement R8 Part 8.4 (if applicable).	The Generator Owner failed to implement freeze protection measures to provide the necessary capability in accordance with Requirement R8 Part 8.3.
R9.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 36 but fewer than 38 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 38 but fewer than 40 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 40 but fewer than 42 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was performed more than 42 calendar months after CEA validation or after the previous Generator Owner review. OR The Generator Owner failed to review a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				remains valid in accordance with Requirement R9. OR The Generator Owner failed to develop or update a Corrective Action Plan where required by Requirement R9, Part 9.1 (if applicable).

D. Regional Variances

None.

E. Associated Documents

Implementation Plan

Calculating Extreme Cold Weather Temperature

EOP-012-3 Technical Rationale

Generator Cold Weather CAP Extension and Constraint Process

Attachment 1

Generator Owners shall determine the applicability of a Generator Cold Weather Constraint declared under Requirements R2, R6, and R7 using the criteria as described below.

The definition of a Generator Cold Weather Constraint is: "Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies".

A Generator Cold Weather Constraint can be identified using the following criteria:

Known Generator Cold Weather Constraints

The following are circumstances which, if present and confirmed as valid by the CEA, will constitute known Generator Cold Weather Constraints:

- Individual wind turbine towers manufactured prior to October 1, 2029 that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1 for generating units that began commercial operation prior to October 1, 2031.
- Application of freeze protection measures to meet the requirements of this Standard that require:
    - Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities;
    - Removal of accumulated frozen precipitation on solar panels;
    - Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters; or
    - Implementation of heat tracing or other de-icing technologies for wind turbine blades, that, through analysis, have been shown to not be effective or not made available by the OEM for generating units of a comparable types in regions that experience similar winter climate conditions.

Case-by-case Determinations of Generator Cold Weather Constraints

The following situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the CEA will these circumstances constitute a valid Generator Cold Weather Constraint:

1. The implementation of a specific freeze protection measure will void an equipment warranty.
2. The implementation of a specific freeze protection measure would exceed a manufacturer's design limitation and the exceedance is expected to functionally impair or degrade the effective operation of the impacted component or system.

3. The implementation of a specific freeze protection measure is precluded by technical or physical limitations. For example:
    a. Installing wind breaks around a cooling tower or air-cooled heat exchanger that requires free airflow for its functionality;
    b. Implementing freeze protection measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system;
    c. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.
4. A determination, through an analysis, that the freeze protection measure would not be effective for the generating unit. Such a determination may be supported, for example, by fleet or industry operating experience (or lack thereof) with the freeze protection measure on generating unit(s) of comparable types in regions that experience similar winter climate conditions.
5. A determination, through an analysis, that the implementation of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:
    a. The implementation of freeze protection measures, while feasible, would result in the accelerated premature retirement of an existing generating unit with no acceptable replacement available within the accelerated timeframe;
    b. The implementation of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit;
    c. The implementation of freeze protection measures would reduce the generating unit's ability to provide Real Power or Reactive Power capability by more than three percent, or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.), when freeze protection measures are not in use; or
    d. The implementation of freeze protection measures would reduce the summer net dependable capacity[1], or net dependable capacity at Peak Demand, of the generating unit by more than three percent or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.);
    e. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.
6. The implementation of new freeze protection measures to an existing generating unit that has previously communicated a retirement date to the appropriate functional entity (e.g., Transmission Planner (TP), Reliability Coordinator (RC),

[1] "net dependable capacity" refers to the definition used for reporting to the NERC in Generating Availability Data System (GADS) appropriate for the generation type.

Balancing Authority (BA), etc.) that falls within three calendar years of the Generator Cold Weather Constraint declaration;

7. The implementation of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.
8. A determination through an analysis that the freeze protection measure is not available on the commercial market for generating units of comparable types in regions that experience similar winter climate conditions.
9. Implementation of freeze protection measures would not increase reliability of a generating unit due to clearly delineated technical or physical reasons on fuel supply which has been communicated to its Reliability Coordinator (RC) or Balancing Authority (BA) and are not due to Fixed Fuel Supply Components, and which are outside the Generator Owner's control.
10. Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Generator Cold Weather Critical Components.

An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

Version History

Version	Date	Action	Change Tracking
1	October 1, 2022	Drafted by Project 2021-07	New
2	February 16, 2023	Revisions drafted by Project 2021-07 due to FERC Order and inquiry Recommendations.	Revisions
2	February 15,2024	Board Adopted	
2	June 27, 2024	FERC Approved	
3	January 10, 2025	Drafted by Project 2024-03, Revised by the Standards Committee under Section 321 of the NERC Rules of Procedure	As directed by the June 2024 FERC Order

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

This is the third draft of the proposed standard for a 45-day comment period.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	July 17, 2024
SAR posted for comment	July 18, 2024 – August 16, 2024
20-day formal comment period with initial ballot	October 17, 2024 – November 5, 2024

Anticipated Actions	Date
18-day formal comment period with additional ballot	December 3, 2024 – December 20, 2024
45-day comment period	January 27, 2025 – March 12, 2025
Board adoption	March, 2025

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.

Previously Approved Terms

This section includes previously approved terms from EOP-012-1 and EOP-012-2. It is included to help with drafting and the posting of EOP-012-3.

Extreme Cold Weather Temperature – The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 01/01/2000 through the date the temperature is calculated.

Generator Cold Weather Critical Component – Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

Fixed Fuel Supply Component – Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

A. Introduction

1. **Title:** Extreme Cold Weather Preparedness and Operations

2. **Number:** EOP-012-3

3. **Purpose:** To address the effects of operating in extreme cold weather by ensuring each Generator Owner has developed and implemented plan(s) to mitigate the reliability impacts of extreme cold weather on its applicable generating units.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Generator Owner

   4.1.2. Generator Operator

   4.2. Facilities:

   4.2.1. Bulk Electric System (BES) generating units. For purposes of this standard, the term "generating unit" subject to these requirements refers to the following Bulk Electric System (BES) resources:

   4.2.1.1. A Bulk Electric System generating resource identified in the BES definition, Inclusion I2 and I4; or

   4.2.1.2. A Blackstart Resource, identified in the BES definition, Inclusion I3.

5. **Effective Date:** See Implementation Plan for Project 2024-03.

B. Requirements and Measures

R1. At least once every five calendar years, each Generator Owner shall, for each of its applicable generating unit(s): [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]

1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable generating unit(s) and identify the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, if necessary; and

1.1.1. If the recalculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation, and if new corrective actions are needed to provide the required operational capability described in Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) calendar months of the recalculation.

1.2. Identify generating unit(s) cold weather data, to include:

1.2.1. Generating unit(s) operating limitations in cold weather to include:

1.2.1.1. Capability and availability;

1.2.1.2. Fuel supply and inventory concerns;

1.2.1.3. Start-up issues;

1.2.1.4. Fuel switching capabilities; and

1.2.1.5. Environmental constraints.

1.2.2. Generating unit(s) minimum:

- Design temperature, and if available, the concurrent wind speed and precipitation;
- Historical operating temperature at least one hour in duration, and if available, the concurrent wind speed and precipitation; or
- Current cold weather performance temperature determined by an engineering analysis, which includes the concurrent wind speed and precipitation.

M1. Each Generator Owner will have evidence documenting its Extreme Cold Weather Temperature calculation, including the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, and design information, operating data, or engineering analysis that supports its generating unit minimum temperature.

R2. Applicable to generating units that begin commercial operation[1] on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[2] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

2.1 For generating units for which the Generator Owner first contractually committed to design criteria[3] relevant to this Requirement before June 29, 2023[4] and which enter commercial operation between October 1, 2027 and March 31, 2028:

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or
- Develop, implement, and complete by April 1, 2028, a Corrective Action Plan to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or
- Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

2.2 For generating units for which the Generator Owner first contractually committed to design criteria[5] relevant to this Requirement on or after June 29, 2023[6]:

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[1] Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing.

[2] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[3] Such commitments would be demonstrated by signed ~~contractual commitments, or other similar documented evidence~~ contracts creating a binding legal agreement with respect to the design criteria for the unit.

[4] In non-U.S. jurisdictions, use the date ~~approved by~~ the applicable government authority in the relevant jurisdiction approved the first version of the EOP-012 Reliability Standard and the definition of Extreme Cold Weather Temperature.

[5] Such commitments would be demonstrated by signed ~~contractual commitments, or other similar documented evidence~~ contracts creating a binding legal agreement with respect to the design criteria for the unit.

[6] In non-U.S. jurisdictions, use the date ~~approved by~~ the applicable government authority in the relevant jurisdiction approved the first version of the EOP-012 Reliability Standard and the definition of Extreme Cold Weather Temperature.

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or
- Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R2, or it has developed, implemented, and completed by April 1, 2028, a Corrective Action Plan, or it has declared a Generator Cold Weather Constraint for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature under Requirement R1 Part 1.2.2 which is equal to or less than the generating unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, Corrective Action Plan(s) (if applicable), and Generator Cold Weather Constraints (if applicable).

R3. Applicable to generating unit(s) in commercial operation prior to October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[7] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature; or
- Develop a Corrective Action Plan to add new or modify existing freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature.

M3. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R3, or it has developed a Corrective Action Plan for the identified issues. Acceptable evidence may include, but is not limited to, the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature per Part 1.2.2 which is

[7] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and Corrective Action Plan(s).

R4. Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness plan(s) shall include the following, at a minimum: *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. The lowest calculated Extreme Cold Weather Temperature for each generating unit, as determined in Requirement R1;[8]

4.2. The generating unit cold weather data, as determined in Requirement R1, Part 1.2;

4.3. Documentation identifying Generator Cold Weather Critical Components;

4.4. Documentation of freeze protection measures implemented on Generator Cold Weather Critical Components that includes measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain); and

4.5. Annual inspection and maintenance of generating unit(s) freeze protection measures implemented on Generator Cold Weather Critical Components.

M4. Each Generator Owner will have evidence documenting that its cold weather preparedness plan(s) was implemented and maintained in accordance with Requirement R4. Examples of documentation to demonstrate a cold weather preparedness plan may include existing operating procedures, plans, checklists, or processes. Examples of documentation, to demonstrate inspections and maintenance have been completed, may include, but are not limited to, completed work order(s) from the Generator Owner's work management system and/or freeze protection checklists identifying the measures inspected and maintained for the Generator Cold Weather Critical Components.

R5. Each Generator Owner, in conjunction with its Generator Operator, shall identify the entity responsible for providing generating unit-specific training, and that identified entity shall provide annual training to the maintenance and operations personnel, as applicable, responsible for implementing the cold weather preparedness plan(s) developed pursuant to Requirement R4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*

M5. Each Generator Operator or Generator Owner will have documented evidence that the applicable personnel completed annual training of the Generator Owner's cold weather preparedness plan(s). This evidence may include, but is not limited to,

[8] Generator Owners shall include the lowest calculated Extreme Cold Weather Temperature for the unit, even where subsequent periodic re-calculations under Requirement R1 Part 1.1 cause an increase in the Extreme Cold Weather Temperature.

documents such as personnel training records, training materials, date of training, agendas or learning objectives, attendance at pre-work briefings, review of work order tasks, tailboards, attendance logs for classroom training, and completion records for computer-based training in fulfillment of Requirement R5.

R6. Each Generator Owner shall, ~~when~~after experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[9] develop and implement[10] a Corrective Action Plan(s) to address identified freezing issues as follows: *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

6.1. The Generator Owner shall develop a Corrective Action Plan for the generating unit ~~experiencing~~that experienced a Generator Cold Weather Reliability Event~~.~~ no later than prior to the first day of the first December following the Generator Cold Weather Reliability Event.[11]

6.2. The Generator Owner shall conduct a review of ~~the applicability of the corrective actions from the Corrective Action Plan developed under Part 6.1 to freeze protection measures on similar equipment at~~ other generating unit(s) ~~owned by the Generator Owner and, if~~in its fleet with the same or similar equipment as the affected generating unit to determine if any of those generating unit(s) are susceptible to the identified freezing issues. If corrective actions are ~~applicable,~~needed, the Generator Owner shall develop or update a Corrective Action Plan to address the other generating unit(s). This review and, if applicable, the development or update of any Corrective Action Plan(s), shall be completed no later than 12 calendar months following the Generator Cold Weather Reliability Event ~~to address the other unit(s)~~.

6.3. For each Corrective Action Plan, the Generator Owner shall include at a minimum:

6.3.1. A summary of the identified cause(s) of the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;

6.3.2. A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures;

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[9] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[10] If a Generator Owner has previously experienced a Generator Cold Weather Reliability Event and developed a Corrective Action Plan for the generating unit or units under Requirement R6 Parts 6.1 or 6.2, the Generator Owner may review and update its existing plan(s) in lieu of developing a new plan.

[11] For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year.

6.3.3. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed;

6.3.4. A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required; and

6.3.5. A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows:

6.3.5.1. For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.[12]

6.3.5.2. For other generating unit(s) owned by the Generator Owner, within 24 calendar months of completing the review required in Part 6.2, or no later than 36 months following the Generator Cold Weather Reliability Event.

6.4 If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval. The submitted Corrective Action Plan extension request shall include the following:

6.4.1. An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner;

6.4.2. Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and

6.4.3. Updated timetable for implementing the selected actions in Part 6.3.2.

6.5 The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, as applicable.

M6. Each Generator Owner will have dated evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event for applicable unit(s) in accordance with Requirement R6. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, updated cold weather

[12] For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year.

preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraint(s).

R7. Each Generator Owner that is required to develop a Corrective Action Plan under Requirements R1 ~~or,~~ R3, or R9 shall develop and implement the Corrective Action Plan in accordance with the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

7.1. For each Corrective Action Plan, the Generator Owner shall include at a minimum the following:

7.1.1. A list of any actions that require new freeze protection measures, with a timetable specifying completion of such measures within 48 calendar months of completing development of the Corrective Action Plan;

7.1.2. A list of any actions that remedy issues with existing freeze protection measures with a timetable specifying completion of such measures within 24 calendar months of completing development of the Corrective Action Plan (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures);

7.1.3. A description of updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; and

7.1.4. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed.

7.2. If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R7 Part 7.1 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following:

7.2.1. An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.2.2. Revisions to the selected actions in Parts 7.1, if any, including utilization of operating procedures, if applicable; and

7.2.3. Updated timetable for implementing the selected actions in Part 7.1.

7.3. The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8.

M7. Each Generator Owner shall have dated evidence that it developed and implemented a Corrective Action Plan for applicable unit(s) in accordance with Requirement R7. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraints.

R8. Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

8.1. Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows:

- For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or
- For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable.

8.2. Update the operating limitations under Requirement R1 Part R1.2 if applicable; ~~and~~

8.3. If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2~~.~~; and

8.4. Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event, the cause of Generator Cold Weather Reliability Event is the same as that of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause of the more recent Generator Cold Weather Reliability Event are addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit.

M8. Each Generator Owner shall have dated evidence that demonstrates it performed the actions in accordance with Requirement R8. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): a copy of the Generator Cold Weather Constraint declaration, evidence the declaration was provided to the Compliance Enforcement Authority in accordance with the specified timeframe, records that document update(s) to the operating limitations, as

needed, ~~and updated~~updates to the Corrective Action Plan(s), if applicable, and documentation and notice to the CEA of subsequent Generator Cold Weather Reliability Events, if applicable.

R9. The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

9.1 If a Generator Cold Weather Constraint is determined to be no longer valid, then within six (6) calendar months of such determination, the Generator Owner shall develop or update a Corrective Action Plan pursuant to Requirement R7.

M9. Each Generator Owner shall have dated evidence that demonstrates it reviewed Generator Cold Weather Constraints in accordance with Requirement R9. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the performance of the review within the required timeframe, records that demonstrate that a Corrective Action Plan was developed or updated within the required timeframe (if applicable).

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" (CEA) means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation.

- The Generator Owner shall retain data or evidence to support its current Extreme Cold Weather Temperature calculation and generating unit cold weather data, plus each calculation or revision since the last audit, for Requirement R1 and Measure M1.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R2 or R3 is complete, whichever timeframe is greater, for Requirements R2 and R3 and Measures M2 and M3. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall retain the current cold weather preparedness plan(s), as evidence of review or revision history, plus each version issued since the last audit and evidence of compliance since the last audit for Requirement R4 and Measure M4.
- The Generator Owner or Generator Operator shall keep data or evidence to show compliance for three years for Requirement R5 and Measure M5.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extensions (if applicable), under Requirement R6 is complete, whichever timeframe is greater, for Requirement R6 and Measure M6. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extension (if applicable), under Requirement R7 is complete, whichever timeframe is

greater, for Requirement R7 and Measure M7. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.

- The Generator Owner shall maintain data or evidence to support its current Generator Cold Weather Constraint declaration(s), plus each revision since the last audit, for Requirement R8 and Measure M8.
- The Generator Owner shall maintain data or evidence to support that it reviewed each Generator Cold Weather Constraint declaration validated by the ~~Compliance Enforcement Authority~~CEA at least once every 36 calendar months since the last audit, for Requirement R9 and Measure M9.

1.3. **Compliance Monitoring and Enforcement Program:** "Compliance Monitoring Enforcement Program" or "CMEP" means, depending on the context (1) the NERC Compliance Monitoring and Enforcement Program (Appendix 4C to the NERC Rules of Procedure) or the Commission-approved program of a Regional Entity, as applicable, or (2) the program, department or organization within NERC or a Regional Entity that is responsible for performing compliance monitoring and enforcement activities with respect to Registered Entities' compliance with Reliability Standards.

1.4. **Compliance Abeyance Period:** From the effective date of Reliability Standard EOP-012-3 until October 1, 2027, the Compliance Enforcement Authority will not pursue an action under Sections 4A.0 or 5.0 of Appendix 4C to the Rules of Procedure for a failure to comply with Reliability Standard EOP-012-3 Requirement R1 Part 1.1 with respect to the calculation of the Extreme Cold Weather Temperature for an applicable generating unit, or any other failure to comply resulting from an incorrect calculation of the Extreme Cold Weather Temperature for that generating unit, against any entity acting in good faith to comply with the standard in accordance with the relevant implementation plan. "Good faith" in this context refers to a sincere intention to comply with Reliability Standard EOP-012-3, regarding all requirements based on the calculation of the Extreme Cold Weather Temperature for each applicable generating unit, following a reasonable and serious assessment by the entity in determining how this Reliability Standard should be applied to its particular facts and circumstances. Entities shall participate in any compliance monitoring activities undertaken by the Compliance Enforcement Authority during this abeyance period and submit documentation as requested.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.
R2.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.
R3.	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	measure(s) meeting the criteria in Requirement R3 for 5% or less of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for 5% or less of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 20% of its applicable units.
R4.	The Generator Owner implemented a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable ~~Parts~~parts within Requirement R4.	The Generator Owner maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.
R5.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	described in Requirement R5 to the greater of: • one applicable personnel for a single generating unit; or • 5% or less of its total applicable personnel.	described in Requirement R5 to the greater of: • two applicable personnel for a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	described in Requirement R5 to the greater of: • three applicable personnel for a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	described in Requirement R5 to the greater of: • four or more applicable personnel for a single generating unit; or • more than 15% of its total applicable personnel.
R6.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 12 but fewer than 15 calendar months after the Generator Cold Weather Reliability Event.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 15 but fewer than 18 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirement R6, but it failed to contain one	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 18 but fewer than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirements R6, but it failed to contain two	The Generator Owner failed to develop a Corrective Action Plan where required under Requirement R6. OR The Generator Owner developed a Corrective Action Plan where required under Requirement R6, but failed to implement it. OR The Generator Owner failed to conduct a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, or the Generator

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		of the elements in Requirement R6, Part 6.3.	of the elements in Requirement R6, Part 6.3. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable), but it did not include one of the required elements.	Owner conducted the review, but it was conducted more than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan, but failed to contain three or more of the elements in Requirement R6, Part 6.3. OR The Generator Owner exceeded the timetables specified for completion in Requirement R6, Part 6.3.5, but did not submit a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable). OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.4 (if applicable), but it did not

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				include two or more of the elements in Requirement R6, Part 6.4. OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s), in accordance with Requirement R6, Part 6.5.
R7.	N/A	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include a description of updates to the cold weather preparedness plan and identification of operating limits as required in Requirement R7, Parts 7.1.3 and 7.1.4.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include one of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include two or more of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
			it did not include one of the required elements.	it did not include two or more of the required elements. OR The Generator Owner failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable). OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) in accordance with Requirement R7 Part 7.3.
R8.	The Generator Owner declared a Generator Cold Weather Constraint and submitted it to the Compliance Enforcement Authority but it did not do so within the	The Generator Owner declared a Generator Cold Weather Constraint, but failed to update its operating limitations as required under Requirement R8, Part 8.2 (if applicable).	The Generator Owner declared a Cold Weather Constraint, but failed to update its Corrective Action Plan following a determination by the Compliance Enforcement Authority that the constraint is invalid in	The Generator Owner declared a Generator Cold Weather Constraint but failed to submit it to the Compliance Enforcement Authority. OR

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	timeframe provided in Requirement R8 Part 8.1.		accordance with Requirement R8 Part 8.3 (as applicable). OR The Generator Owner failed to document and provide the required notice to the CEA under Requirement R8 Part 8.4 (if applicable).	The Generator Owner failed to implement freeze protection measures to provide the necessary capability in accordance with Requirement R8 Part 8.3.
R9.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 36 but fewer than 38 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 38 but fewer than 40 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 40 but fewer than 42 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was performed more than 42 calendar months after CEA validation or after the previous Generator Owner review. OR The Generator Owner failed to review a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				remains valid in accordance with Requirement R9. OR The Generator Owner failed to develop or update a Corrective Action Plan where required by Requirement R9, Part 9.1 (if applicable).

D. Regional Variances

None.

E. Associated Documents

Implementation Plan

Calculating Extreme Cold Weather Temperature

EOP-012-3 Technical Rationale

Generator Cold Weather CAP Extension and Constraint Process

Attachment 1

Generator Owners shall determine the applicability of a Generator Cold Weather Constraint declared under Requirements R2, R6, and R7 using the criteria as described below.

The definition of a Generator Cold Weather Constraint is: "Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies".

A Generator Cold Weather Constraint can be identified using the following criteria:

Known Generator Cold Weather Constraints

The following are circumstances which, if present and confirmed as valid by the CEA, will constitute known Generator Cold Weather Constraints:

- Individual wind turbine towers manufactured prior to October 1, ~~2027~~2029 that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1 for generating units that began commercial operation prior to October 1, ~~2027~~2031.
- ~~Implementation of heat tracing or other de-icing technologies for wind turbine blades, that, through analysis, have been shown to not be effective or not made available by the OEM for generating units of a comparable types in regions that experience similar winter climate conditions.~~
- Application of freeze protection measures to meet the requirements of this Standard that require:
  - Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities~~.~~;
  - Removal of accumulated frozen precipitation on solar panels~~.~~;
  - Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters~~.~~; or
  - Implementation of heat tracing or other de-icing technologies for wind turbine blades, that, through analysis, have been shown to not be effective or not made available by the OEM for generating units of a comparable types in regions that experience similar winter climate conditions.

Case-by-case Determinations of Generator Cold Weather Constraints

The following situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the CEA will these circumstances constitute a valid Generator Cold Weather Constraint:

1. The implementation of a specific freeze protection measure will void an equipment warranty.
2. The implementation of a specific freeze protection measure ~~applied to address conditions beyond the manufacturer's design limitations.~~would exceed a manufacturer's design limitation and the exceedance is expected to functionally impair or degrade the effective operation of the impacted component or system.
3. The implementation of a specific freeze protection measure is precluded by technical or physical limitations. For example:
    a. Installing wind breaks around a cooling tower or air-cooled heat exchanger that requires free airflow for its functionality;
    b. Implementing freeze protection measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system;
    c. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.
4. A determination, through an analysis, that the freeze protection measure ~~has been shown to be ineffective or that there is no record that such a measure has been effectively utilized~~would not be effective for the generating unit. Such a determination may be supported, for example, by fleet or industry operating experience (or lack thereof) with the freeze protection measure on generating unit(s) of comparable types in regions that experience similar winter climate conditions.
5. A determination, through an analysis, that the implementation of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:
    a. The implementation of freeze protection measures, while feasible, would result in the accelerated premature retirement of an existing generating unit with no acceptable replacement available within the accelerated timeframe;
    b. The implementation of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit;
    c. The implementation of freeze protection measures would reduce the generating unit's ability to provide Real Power or Reactive Power capability by more than three percent, or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.), when freeze protection measures are not in use; or

d. The implementation of freeze protection measures would reduce the summer net dependable capacity[13], or net dependable capacity at Peak Demand, of the generating unit by more than three percent or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.);
e. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.

6. The implementation of new freeze protection measures to an existing generating unit that has previously communicated a retirement date to the appropriate functional entity (e.g., Transmission Planner (TP), Reliability Coordinator (RC), Balancing Authority (BA), etc.) that falls within three calendar years of the Generator Cold Weather Constraint declaration;
7. The implementation of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.
8. A determination through an analysis that the freeze protection measure is not available on the commercial market for generating units of comparable types in regions that experience similar winter climate conditions.
9. Implementation of freeze protection measures would not increase reliability of a generating unit due to clearly delineated technical or physical ~~constraints~~reasons on fuel supply which has been communicated to its Reliability Coordinator (RC) or Balancing Authority (BA) and are not due to Fixed Fuel Supply Components, and which are outside the Generator Owner's control.
10. Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Generator Cold Weather Critical Components.

~~When submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply.~~ An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

[13] "net dependable capacity" refers to the definition used for reporting to the NERC in Generating Availability Data System (GADS) appropriate for the generation type.

Version History

Version	Date	Action	Change Tracking
1	October 1, 2022	Drafted by Project 2021-07	New
2	February 16, 2023	Revisions drafted by Project 2021-07 due to FERC Order and inquiry Recommendations.	Revisions
2	February 15,2024	Board Adopted	
2	June 27, 2024	FERC Approved	
3	January 10, 2025	Drafted by Project 2024-03, Revised by the Standards Committee under Section 321 of the NERC Rules of Procedure	As directed by the June 2024 FERC Order

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

This is the third draft of the proposed standard for a 45-day comment period.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	July 17, 2024
SAR posted for comment	July 18, 2024 – August 16, 2024
20-day formal comment period with initial ballot	October 17, 2024 – November 5, 2024

Anticipated Actions	Date
18-day formal comment period with additional ballot	December 3, 2024 – December 20, 2024
45-day comment period	January 27, 2025 – March 12, 2025
Board adoption	March, 2025

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. ~~using the criteria below.~~ Freeze protection measures ~~are not intended to be limited to optimum practices, methods, or technologies, but are also intended to~~ include ~~acceptable~~ practices, methods, or technologies ~~generally~~ implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.

~~Criteria used to determine a constraint include practices, methods, or technologies which, given the exercise of reasonable judgment in light of the facts known at the time the decision to declare the constraint was made:~~

~~Were not broadly implemented at generating units for comparable unit types in regions that experience similar winter climate conditions to provide reasonable assurance of efficacy;~~

~~Could not have been expected to accomplish the desired result; or~~

~~Could not have been implemented at a reasonable cost consistent with good business practices, reliability, or safety. A cost may be deemed "unreasonable" when implementation of selected freeze protection measure(s) are uneconomical to the extent that they would require prohibitively expensive modifications or significant expenditures on equipment with minimal remaining life.~~

Previously Approved Terms

This section includes previously approved terms from EOP-012-1 and EOP-012-2. It is included to help with drafting and the posting of EOP-012-3.

Extreme Cold Weather Temperature – The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 01/01/2000 through the date the temperature is calculated.

Generator Cold Weather Critical Component – Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated

Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

Fixed Fuel Supply Component – Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

A. Introduction

1. **Title:** Extreme Cold Weather Preparedness and Operations

2. **Number:** EOP-~~012-2~~012-3

3. **Purpose:** To address the effects of operating in extreme cold weather by ensuring each Generator Owner has developed and implemented plan(s) to mitigate the reliability impacts of extreme cold weather on its applicable generating units.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Generator Owner

   4.1.2. Generator Operator

   4.2. Facilities:

   4.2.1. Bulk Electric System (BES) generating units. For purposes of this standard, the term "generating unit" subject to these requirements refers to the following Bulk Electric System (BES) resources:

   4.2.1.1. A Bulk Electric System generating resource identified in the BES definition, ~~inclusion~~Inclusion I2 and I4; or

   4.2.1.2. A Blackstart Resource, identified in the BES definition, ~~inclusion~~Inclusion I3.

5. **Effective Date:** See Implementation Plan for Project ~~2021-07 Phase 2~~2024-03.

B. Requirements and Measures

R1. At least once every five calendar years, each Generator Owner shall, for each of its applicable generating unit(s): [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]

1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable generating unit(s) and identify the calculation date ~~and~~, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, if necessary; and

1.1.1. If the ~~re-calculated~~recalculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation~~. If~~, and if new corrective actions are needed to provide the required operational capability ~~under~~described in Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) calendar months of the recalculation.

1.2. Identify generating unit(s) cold weather data, to include:

1.2.1. Generating unit(s) operating limitations in cold weather to include:

1.2.1.1. Capability and availability;

1.2.1.2. Fuel supply and inventory concerns;

1.2.1.3. Start-up issues;

1.2.1.4. Fuel switching capabilities; and

1.2.1.5. Environmental constraints.

1.2.2. Generating unit(s) minimum:

- Design temperature, and if available, the concurrent wind speed and precipitation;
- Historical operating temperature at least one hour in duration, and if available, the concurrent wind speed and precipitation; or
- Current cold weather performance temperature determined by an engineering analysis, which includes the concurrent wind speed and precipitation.

M1. Each Generator Owner will have evidence documenting its Extreme Cold Weather Temperature calculation, including the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, and design information, operating data, or engineering analysis that supports its generating unit minimum temperature.

R2. Applicable to generating units ~~with a~~that begin commercial operation ~~date~~ [1] on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),~~1~~[2] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

2.1 For generating units for which the Generator Owner first contractually committed to design criteria[3] relevant to this Requirement before June 29, 2023[4] and which enter commercial operation between October 1, 2027 and March 31, 2028:

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or
- Develop, implement, and complete by April 1, 2028, a Corrective Action Plan~~(s)~~ to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours~~.~~; or
- Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

2.2 For generating units for which the Generator Owner first contractually committed to design criteria[5] relevant to this Requirement on or after June 29, 2023[6]:

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[1] Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing.

[2] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[3] Such commitments would be demonstrated by signed contracts creating a binding legal agreement with respect to the design criteria for the unit.

[4] In non-U.S. jurisdictions, use the date the applicable government authority in the relevant jurisdiction approved the first version of the EOP-012 Reliability Standard and the definition of Extreme Cold Weather Temperature.

[5] Such commitments would be demonstrated by signed contracts creating a binding legal agreement with respect to the design criteria for the unit.

[6] In non-U.S. jurisdictions, use the date the applicable government authority in the relevant jurisdiction approved the first version of the EOP-012 Reliability Standard and the definition of Extreme Cold Weather Temperature.

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or
- Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R2, or it has developed, implemented, and completed by April 1, 2028, a Corrective Action Plan, or it has declared a Generator Cold Weather Constraint for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature under Requirement R1 Part 1.2.2 which is equal to or less than the generating unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, ~~and~~ Corrective Action Plan(s) (if applicable), and Generator Cold Weather Constraints (if applicable).

R3. Applicable to generating unit(s) in commercial operation prior to October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[~~2~~7] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature; or
- Develop a Corrective Action Plan to add new or modify existing freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature.

M3. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R3, or it has developed a Corrective Action Plan for the identified issues. Acceptable evidence may include, but is not limited to, the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature per Part 1.2.2 which is

[7] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and Corrective Action Plan(s).

R4. Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness plan(s) shall include the following, at a minimum: *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. The lowest calculated Extreme Cold Weather Temperature for each generating unit, as determined in Requirement R1;~~3~~[8]

4.2. The generating unit cold weather data, as determined in Requirement ~~R1.2~~R1, Part 1.2;

4.3. Documentation identifying Generator Cold Weather Critical Components;

4.4. Documentation of freeze protection measures implemented on Generator Cold Weather Critical Components ~~which~~that includes measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain); and

4.5. Annual inspection and maintenance of generating unit(s) freeze protection measures implemented on Generator Cold Weather Critical Components.

M4. Each Generator Owner will have evidence documenting that its cold weather preparedness plan(s) was implemented and maintained in accordance with Requirement R4. Examples of documentation to demonstrate a cold weather preparedness plan may include existing operating procedures, plans, checklists, or processes. Examples of documentation, to demonstrate inspections and maintenance have been completed, may include, but are not limited to, completed work order(s) from the Generator Owner's work management system and/or freeze protection checklists identifying the measures inspected and maintained for the Generator Cold Weather Critical Components.

R5. Each Generator Owner, in conjunction with its Generator Operator, shall identify the entity responsible for providing ~~the~~ generating unit-specific training, and that identified entity shall provide annual training to ~~its~~the maintenance ~~or~~and operations personnel, as applicable, responsible for implementing the cold weather preparedness plan(s) developed pursuant to Requirement R4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*

M5. Each Generator Operator or Generator Owner will have documented evidence that the applicable personnel completed annual training of the Generator Owner's cold weather preparedness plan(s). This evidence may include, but is not limited to,

[8] Generator Owners shall include the lowest calculated Extreme Cold Weather Temperature for the unit, even where subsequent periodic re-calculations under Requirement R1 Part 1.1 cause an increase in the Extreme Cold Weather Temperature.

documents such as personnel training records, training materials, date of training, agendas or learning objectives, attendance at pre-work briefings, review of work order tasks, tailboards, attendance logs for classroom training, and completion records for computer-based training in fulfillment of Requirement R5.

R6. Each Generator Owner shall, ~~for each~~after experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[~~4~~9] develop and implement[10] a Corrective Action Plan ~~when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed within 150 days or by July 1, whichever is earlier, and contain at a minimum~~(s) to address identified freezing issues as follows: *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

6.1. The Generator Owner shall develop a Corrective Action Plan for the generating unit that experienced a Generator Cold Weather Reliability Event no later than prior to the first day of the first December following the Generator Cold Weather Reliability Event.[11]

6.2. The Generator Owner shall conduct a review of other generating unit(s) in its fleet with the same or similar equipment as the affected generating unit to determine if any of those generating unit(s) are susceptible to the identified freezing issues. If corrective actions are needed, the Generator Owner shall develop or update a Corrective Action Plan to address the other generating unit(s). This review and, if applicable, the development or update of any Corrective Action Plan(s), shall be completed no later than 12 calendar months following the Generator Cold Weather Reliability Event.

6.3. For each Corrective Action Plan, the Generator Owner shall include at a minimum:

~~**6.1**~~**6.3.1.** A summary of the identified cause(s) ~~for~~of the Generator Cold Weather ~~–~~Reliability Event, where applicable, and any relevant associated data;

[9] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[10] If a Generator Owner has previously experienced a Generator Cold Weather Reliability Event and developed a Corrective Action Plan for the generating unit or units under Requirement R6 Parts 6.1 or 6.2, the Generator Owner may review and update its existing plan(s) in lieu of developing a new plan.

[11] For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year.

~~**6.2.** A review of applicability to similar equipment at generating units owned by the Generator Owner; and~~

6.3.2. A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures;

~~**6.3**~~**6.3.3.** An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until ~~execution~~implementation of the corrective action(s) identified in the Corrective Action Plan~~.~~ is completed;

6.3.4. A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required; and

6.3.5. A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows:

6.3.5.1. For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.[12]

6.3.5.2. For other generating unit(s) owned by the Generator Owner, within 24 calendar months of completing the review required in Part 6.2, or no later than 36 months following the Generator Cold Weather Reliability Event.

6.4 If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval. The submitted Corrective Action Plan extension request shall include the following:

6.4.1. An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner;

6.4.2. Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and

6.4.3. Updated timetable for implementing the selected actions in Part 6.3.2.

6.5 The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, as applicable.

[12] For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year.

M6. Each Generator Owner will have ~~documented~~dated evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event ~~at an~~for applicable unit(s) in accordance with Requirement R6. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s) ~~and~~, completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraint(s).

R7. Each Generator Owner~~, for each~~ that is required to develop a Corrective Action Plan ~~developed pursuant to~~under Requirements R1~~, R2~~, R3, or ~~R6, shall~~R9 shall develop and implement the Corrective Action Plan in accordance with the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

7.1. ~~Include a timetable for implementing the selected corrective action(s) that shall~~For each Corrective Action Plan, the Generator Owner shall include at a minimum the following:

7.1.1. ~~List the action(s) which address(es) existing equipment or~~A list of any actions that require new freeze protection measures, ~~if any, to be completed~~with a timetable specifying completion of such measures within ~~24~~48 calendar months of completing development of the Corrective Action Plan;

~~**7.1.2.** List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar months of completing development of the Corrective Action Plan; and~~

7.1.2. A list of any actions that remedy issues with existing freeze protection measures with a timetable specifying completion of such measures within 24 calendar months of completing development of the Corrective Action Plan (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures);

7.1.3. ~~List the~~A description of updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; and

~~**7.2.** Implement the Corrective Action Plan in accordance with the specified timetables in Requirement R7 Part 7.1;~~

~~**7.3.** Update the Corrective Action Plan action(s) and timetable(s), with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and~~

7.1.4. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply

until implementation of the corrective action(s) identified in the Corrective Action Plan is completed.

7.2. If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R7 Part 7.1 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following:

7.2.1. An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.2.2. Revisions to the selected actions in Parts 7.1, if any, including utilization of operating procedures, if applicable; and

7.2.3. Updated timetable for implementing the selected actions in Part 7.1.

~~**7.4.** Document~~**7.3.** The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint ~~that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan~~in accordance with Requirement R8.

M7. Each Generator Owner shall have dated evidence that ~~demonstrates it~~it developed and implemented ~~each~~a Corrective Action Plan~~, including updating actions or timetables, or has explained in a declaration why corrective actions are not being implemented~~ for applicable unit(s) in accordance with Requirement ~~R8~~R7. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): ~~records that document the implementation of each~~ Corrective Action Plan~~ and the completion of actions for each~~(s), completed work orders, copies of any Corrective Action Plan ~~including revision history of each Corrective Action Plan and, if applicable, justification to support any changes to corrective action(s) identified in the Corrective Action Plan or timetables exceeding the timelines in Requirement R7 Part 7.1. For each Corrective Action Plan applying to multiple generating units, the timetable shall reflect implementation at each unit addressed in the Corrective Action Plan. Evidence may also include work management program records, work orders, and maintenance records. Any declaration shall contain dated documentation to support constraints identified by the Generator Owner.~~extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraints.

R8. Each Generator Owner that ~~creates~~declares a Generator Cold Weather Constraint ~~declaration~~in accordance with Attachment 1 shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

8.1. ~~Review the~~Submit its Generator Cold Weather Constraint declaration ~~at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and~~ (s) to the CEA as follows:

- For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or
- For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable.

8.2. Update the operating limitations ~~associated with capability and availability~~ under Requirement R1 Part R1.2 if applicable~~.~~;

8.3. If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2; and

8.4. Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event, the cause of Generator Cold Weather Reliability Event is the same as that of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause of the more recent Generator Cold Weather Reliability Event are addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit.

M8. Each Generator Owner shall have dated evidence that demonstrates it performed the ~~review and updated operating limitations as needed~~actions in accordance with Requirement R8. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): a copy of the Generator Cold Weather Constraint declaration, evidence the declaration was provided to the Compliance Enforcement Authority in accordance with the specified timeframe, records that document ~~the performance of the review and~~ update(s) to the operating limitations, as needed, updates to the Corrective Action Plan(s), if applicable, and documentation and notice to the CEA of subsequent Generator Cold Weather Reliability Events, if applicable.

R9. The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

9.1 If a Generator Cold Weather Constraint is determined to be no longer valid, then within six (6) calendar months of such determination, the Generator Owner shall develop or update a Corrective Action Plan pursuant to Requirement R7.

M9. Each Generator Owner shall have dated evidence that demonstrates it reviewed Generator Cold Weather Constraints in accordance with Requirement R9. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the performance of the review within the required timeframe, records that demonstrate that a Corrective Action Plan was developed or updated within the required timeframe (if applicable).

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" (CEA) means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation.

- The Generator Owner shall retain data or evidence to support its current Extreme Cold Weather Temperature calculation and generating unit cold weather data, plus each calculation or revision since the last audit, for Requirement R1 and Measure M1.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R2 or R3 is complete, whichever timeframe is greater, for Requirements R2 and R3 and Measures M2 and M3. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall retain the current cold weather preparedness plan(s), as evidence of review or revision history, plus each version issued since the last audit and evidence of compliance since the last audit for Requirement R4 and Measure M4.
- The Generator Owner or Generator Operator shall keep data or evidence to show compliance for three years for Requirement R5 and Measure M5.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extensions (if applicable), under Requirement R6 is complete, whichever timeframe is greater, for Requirement R6 and Measure M6. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extension (if applicable), under Requirement R7 is complete, whichever ~~time~~

~~frame~~timeframe is greater, for Requirement R7 and Measure M7. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.

- The Generator Owner shall maintain data or evidence to support its current Generator Cold Weather Constraint declaration(s), plus each revision since the last audit, for Requirement R8 and Measure M8.
- The Generator Owner shall maintain data or evidence to support that it reviewed each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months since the last audit, for Requirement R9 and Measure M9.

1.3. Compliance Monitoring and Enforcement Program: ~~As defined in~~"Compliance Monitoring Enforcement Program" or "CMEP" means, depending on the context (1) the NERC ~~Rules of Procedure, "~~Compliance Monitoring and Enforcement Program~~" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated~~ (Appendix 4C to the NERC Rules of Procedure) or the Commission-approved program of a Regional Entity, as applicable, or (2) the program, department or organization within NERC or a Regional Entity that is responsible for performing compliance monitoring and enforcement activities with respect to Registered Entities' compliance with Reliability ~~Standard~~Standards.

1.4. Compliance Abeyance Period: From the effective date of Reliability Standard EOP-012-3 until October 1, 2027, the Compliance Enforcement Authority will not pursue an action under Sections 4A.0 or 5.0 of Appendix 4C to the Rules of Procedure for a failure to comply with Reliability Standard EOP-012-3 Requirement R1 Part 1.1 with respect to the calculation of the Extreme Cold Weather Temperature for an applicable generating unit, or any other failure to comply resulting from an incorrect calculation of the Extreme Cold Weather Temperature for that generating unit, against any entity acting in good faith to comply with the standard in accordance with the relevant implementation plan. "Good faith" in this context refers to a sincere intention to comply with Reliability Standard EOP-012-3, regarding all requirements based on the calculation of the Extreme Cold Weather Temperature for each applicable generating unit, following a reasonable and serious assessment by the entity in determining how this Reliability Standard should be applied to its particular facts and circumstances. Entities shall participate in any compliance monitoring activities undertaken by the Compliance Enforcement Authority during this abeyance period and submit documentation as requested.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.
R2.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not ~~develop~~complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not ~~develop~~complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not ~~develop~~complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not ~~develop~~complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R3.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for 5% or less of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 20% of its applicable units.
R4.	The Generator Owner implemented a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable ~~Parts~~parts within Requirement R4.	The Generator Owner ~~had and~~ maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.
R5.	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • one applicable personnel ~~at~~for a single generating unit; or • 5% or less of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • two applicable personnel ~~at~~for a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • three applicable personnel ~~at~~for a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • four or more applicable personnel ~~at~~for a single generating unit; or • more than 15% of its total applicable personnel.
R6.	The Generator Owner ~~developed a Corrective Action Plan, but not within 150 days or by July 1 as required in Requirement R6~~conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 12 but fewer than 15 calendar months after the Generator Cold Weather Reliability Event.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 15 but fewer than 18 calendar months after the Generator Cold Weather Reliability Event. OR The Generator ~~Owner's~~Owner developed and implemented a Corrective Action Plan where required under Requirement	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 18 but fewer than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator ~~Owner's~~Owner developed and implemented a Corrective Action Plan where required under Requirements	The Generator Owner failed to develop a Corrective Action Plan where required under Requirement R6. OR The Generator Owner developed a Corrective Action Plan where required under Requirement R6, but failed to implement it. OR The Generator Owner failed to conduct a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		R6, but it failed to ~~comply with~~contain one of the elements in Requirement R6, ~~Parts 6.1 through~~Part 6.3.	R6, but it failed to ~~comply with~~contain two of the elements in Requirement R6, ~~Parts 6.1 through~~Part 6.3. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable), but it did not include one of the required elements.	accordance with Requirement R6, Part 6.2, or the Generator Owner conducted the review, but it was conducted more than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator ~~Owner's~~Owner developed and implemented a Corrective Action Plan, but failed to ~~comply with~~contain three or more of the elements in Requirement R6, ~~Parts 6.1 through~~Part 6.3. OR The Generator Owner exceeded the timetables specified for completion in Requirement R6, Part 6.3.5, but did not ~~develop~~submit a Corrective Action Plan~~, as required by~~ extension request in accordance with Requirement R6~~.~~, Part 6.4 (if applicable). OR

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.4 (if applicable), but it did not include two or more of the elements in Requirement R6, Part 6.4. OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s), in accordance with Requirement R6, Part 6.5.
R7.	~~The Generator Owner implemented a Corrective Action Plan, but failed to update the Corrective Action Plan when corrective action(s) changed in accordance with Requirement R7.~~N/A	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include a ~~timetable for implementing the selected corrective actions meeting the criteria of~~description of updates to the cold weather preparedness	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to ~~implement the~~ include one of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include two or more of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		plan and identification of operating limits as required in Requirement R7 ~~Part 7.1~~, Parts 7.1.3 and 7.1.4.	OR The Generator Owner submitted a Corrective Action Plan ~~within the specified timetable or failed to update the Corrective Action Plan, with justification, when timetable(s) exceeded the timelines in Requirement R7 Part 7.1.~~ extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include one of the required elements.	The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include two or more of the required elements. OR The Generator Owner failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable). OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan ~~or failed to~~, and did not document in a declaration ~~why corrective actions are not being implemented~~any Generator Cold Weather Constraint(s) in accordance with Requirement R7 Part 7.3.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R8.	~~N/A~~The Generator Owner declared a Generator Cold Weather Constraint and submitted it to the Compliance Enforcement Authority but it did not do so within the timeframe provided in Requirement R8 Part 8.1.	~~N/A~~The Generator Owner declared a Generator Cold Weather Constraint, but failed to update its operating limitations as required under Requirement R8, Part 8.2 (if applicable).	The Generator Owner ~~failed to comply with one of the elements in~~declared a Cold Weather Constraint, but failed to update its Corrective Action Plan following a determination by the Compliance Enforcement Authority that the constraint is invalid in accordance with Requirement R8~~, Parts 8.1 through 8.2.~~ Part 8.3 (as applicable). OR The Generator Owner failed to document and provide the required notice to the CEA under Requirement R8 Part 8.4 (if applicable).	The Generator Owner declared a Generator Cold Weather Constraint but failed to submit it to the Compliance Enforcement Authority. OR The Generator Owner failed to ~~comply with all of the elements in~~implement freeze protection measures to provide the necessary capability in accordance with Requirement R8~~, Parts 8.1 through 8.2.~~ Part 8.3.
R9.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 36 but fewer than 38	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 38 but fewer than 40	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 40 but fewer than 42	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was performed more than 42 calendar months after

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	calendar months after CEA validation or after the previous Generator Owner review.	calendar months after CEA validation or after the previous Generator Owner review.	calendar months after CEA validation or after the previous Generator Owner review.	CEA validation or after the previous Generator Owner review. OR The Generator Owner failed to review a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9. OR The Generator Owner failed to develop or update a Corrective Action Plan where required by Requirement R9, Part 9.1 (if applicable).

D. Regional Variances

None.

E. Associated Documents

Implementation Plan

Calculating Extreme Cold Weather Temperature

EOP-012-3 Technical Rationale

Generator Cold Weather CAP Extension and Constraint Process

Attachment 1

Generator Owners shall determine the applicability of a Generator Cold Weather Constraint declared under Requirements R2, R6, and R7 using the criteria as described below.

The definition of a Generator Cold Weather Constraint is: "Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies".

A Generator Cold Weather Constraint can be identified using the following criteria:

Known Generator Cold Weather Constraints

The following are circumstances which, if present and confirmed as valid by the CEA, will constitute known Generator Cold Weather Constraints:

- Individual wind turbine towers manufactured prior to October 1, 2029 that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1 for generating units that began commercial operation prior to October 1, 2031.
- Application of freeze protection measures to meet the requirements of this Standard that require:
  - Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities;
  - Removal of accumulated frozen precipitation on solar panels;
  - Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters; or
  - Implementation of heat tracing or other de-icing technologies for wind turbine blades, that, through analysis, have been shown to not be effective or not made available by the OEM for generating units of a comparable types in regions that experience similar winter climate conditions.

Case-by-case Determinations of Generator Cold Weather Constraints

The following situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the CEA will these circumstances constitute a valid Generator Cold Weather Constraint:

1. The implementation of a specific freeze protection measure will void an equipment warranty.
2. The implementation of a specific freeze protection measure would exceed a manufacturer's design limitation and the exceedance is expected to functionally impair or degrade the effective operation of the impacted component or system.

3. The implementation of a specific freeze protection measure is precluded by technical or physical limitations. For example:
    a. Installing wind breaks around a cooling tower or air-cooled heat exchanger that requires free airflow for its functionality;
    b. Implementing freeze protection measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system;
    c. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.
4. A determination, through an analysis, that the freeze protection measure would not be effective for the generating unit. Such a determination may be supported, for example, by fleet or industry operating experience (or lack thereof) with the freeze protection measure on generating unit(s) of comparable types in regions that experience similar winter climate conditions.
5. A determination, through an analysis, that the implementation of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:
    a. The implementation of freeze protection measures, while feasible, would result in the accelerated premature retirement of an existing generating unit with no acceptable replacement available within the accelerated timeframe;
    b. The implementation of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit;
    c. The implementation of freeze protection measures would reduce the generating unit's ability to provide Real Power or Reactive Power capability by more than three percent, or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.), when freeze protection measures are not in use; or
    d. The implementation of freeze protection measures would reduce the summer net dependable capacity[13], or net dependable capacity at Peak Demand, of the generating unit by more than three percent or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.);
    e. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.
6. The implementation of new freeze protection measures to an existing generating unit that has previously communicated a retirement date to the appropriate functional entity (e.g., Transmission Planner (TP), Reliability Coordinator (RC),

[13] "net dependable capacity" refers to the definition used for reporting to the NERC in Generating Availability Data System (GADS) appropriate for the generation type.

Balancing Authority (BA), etc.) that falls within three calendar years of the Generator Cold Weather Constraint declaration;

7. The implementation of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.
8. A determination through an analysis that the freeze protection measure is not available on the commercial market for generating units of comparable types in regions that experience similar winter climate conditions.
9. Implementation of freeze protection measures would not increase reliability of a generating unit due to clearly delineated technical or physical reasons on fuel supply which has been communicated to its Reliability Coordinator (RC) or Balancing Authority (BA) and are not due to Fixed Fuel Supply Components, and which are outside the Generator Owner's control.
10. Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Generator Cold Weather Critical Components.

An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

Version History

Version	Date	Action	Change Tracking
1	October 1, 2022	Drafted by Project 2021-07	New
2	February 16, 2023	Revisions drafted by Project 2021-07 due to FERC Order and inquiry Recommendations.	Revisions
2	February 15,2024	Board Adopted	
2	June 27, 2024	FERC Approved	
3	January 10, 2025	Drafted by Project 2024-03, Revised by the Standards Committee under Section 321 of the NERC Rules of Procedure	As directed by the June 2024 FERC Order

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Implementation Plan

Project 2024-03 Revisions to EOP-012-2
Reliability Standard EOP-012-3

Applicable Standard(s)

- EOP-012-3 Extreme Cold Weather Preparedness and Operations

Requested Retirement(s)

- EOP-012-2 Extreme Cold Weather Preparedness and Operations

Applicable Entities

- Generator Owner
- Generator Operator

Background

The purpose of Project 2024-03 is to address the directives identified by FERC in its June 27, 2024 order approving Reliability Standard EOP-012-2 and directing further modifications. *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61,204 (2024) (June 2024 Order), available here. In that order, FERC found that further improvements are needed to address ambiguous language and other reliability gaps/implementation issues in the standard and related definitions to fully address issues first raised in the Commission's February 2023 Order approving EOP-012-1. *See N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094, PP 3-11 (2023) (February 2023 Order); *reh'g denied*, 183 FERC ¶ 62,034, *order on reh'g*, 183 FERC ¶ 61,222 (2023). In the June 2024 Order, FERC directed that NERC submit the modifications within nine months of the date of the order, or by March 27, 2025.

Proposed EOP-012-3 Requirement R1 is an existing EOP-012-2 requirement that consolidated and clarified requirements for each Generator Owner to calculate the Extreme Cold Weather Temperature for its generating unit location(s) and identify generating unit cold weather data, and to review these calculations and data every five years. Proposed EOP-012-3 Requirement R4 and R5 continue the current requirements under EOP-012-2 (with minimal clarifications in Requirement R4), that all Generator Owners develop cold weather preparedness plans and that all Generator Owners or Generator Operators (as appropriate) conduct annual training on those plans. Proposed EOP-012-3 clarifies which generating unit(s) are subject to the winter operations capability requirements of the standard (Requirements R2 and R3). Proposed EOP-012-3 Requirement R6 provides clarification regarding responses to a Generator Cold Weather Reliability Event that may require Corrective Action Plans (CAPs). Proposed EOP-012-3 Requirement R7 specifies timelines for the completion of Corrective Action Plans, consistent with the February 2023 Order and FERC directives in its June 2024 Order. The drafting team crafted language to meet the concern of

Generator Owners regarding timelines for units under consideration or development. The language reflects FERC's concern regarding applicability of Corrective Action Plans to the correct Generator Owner. Proposed EOP-012-3 Requirement R9 requires Generator Owners to review constraint declarations at least every 36 calendar months, or as needed, when a change of status occurs and ensures operating limitations caused by the constraints are clearly identified. The revised *Glossary* term for Generator Cold Weather Constraint, and new Attachment 1 both clarify the circumstances under which Generator Owners may declare Generator Cold Weather Constraints.

For additional information on the FERC Order directives addressed in proposed Reliability Standard EOP-012-3, see the Consideration of Directives, available on the Project 2024-03 project page.

General Considerations

This implementation plan reflects past consideration that entities need time to develop, implement, and maintain cold weather plans; identify Generator Cold Weather Critical Components, and identify freeze protection measures. The implementation plan also considers the FERC directives regarding the need for an accelerated effective date of directed changes and abbreviated implementation periods for generator winterization measures. FERC has repeatedly expressed an urgency in completing cold weather Reliability Standards and having them implemented in a timely manner to address the risks cold weather events present to the reliability of the Bulk-Power System. FERC noted the five core directives to NERC in the June 2024 Order are not new issues, but rather targeted modifications necessary to fully address issues identified in FERC's prior February 2023 Order. *See* June 2024 Order at P 30.

The drafting team determined that later phased-in compliance dates were not necessary for the revised requirements in EOP-012-3, as the practical impact of implementing the proposed changes, in light of the regulatory history described above, is not expected to be significant:

- For revised Requirement R2, units further into design or construction have separate requirements from those units in the early phases of design: the units further along in the design/construction phase are allowed to develop, implement, and complete Corrective Action Plans to meet the more rigorous requirements for new generating units, whereas units in the early stages of design are expected to meet the more rigorous requirements unless a Generator Cold Weather Constraint applies. Additional time is not needed to implement this change.
- For revised Requirement R6, relating to Generator Cold Weather Reliability Events, the language reflects the FERC directives regarding Corrective Action Plans, Corrective Action Plan extensions, and consideration of the applicability of corrective actions across a fleet for Generation Owners that had a generating unit(s) that experienced a Generator Cold Weather Reliability Event. Additional time to implement these changes is not needed, given the conditions in which a Corrective Action Plan may be needed for a Generator Cold Weather Reliability Event.

- For revised Requirement R7, the drafting team clarified the applicability of Corrective Action Plan requirements and provided Corrective Action Plan extension request language similar to that found in Reliability Standard TPL-007-4 to address the June 2024 Order. Additional guidance is provided below.

In consideration of these factors, and to ensure entities have sufficient notice of their revised obligations under Reliability Standard EOP-012-3, the proposed implementation plan provides that the standard shall become effective on the later of October 1, 2025, which is the date Reliability Standard EOP-012-2 will be fully enforceable in the United States, or three months following regulatory approval.

Additional guidance is provided to aid in the orderly implementation of the standard as entities transition from compliance with Reliability Standard EOP-012-2 to Reliability Standard EOP-012-3.

Effective Date

The effective dates for the proposed Reliability Standards are provided below. Where the drafting team identified or recognized the need for a longer implementation period for compliance with a particular section of a proposed Reliability Standard (i.e., an entire Requirement or a portion thereof), the additional time for compliance with that section is specified below. The phased-in compliance date for those particular sections represents the date that entities must be compliant with that particular section of the Reliability Standard, even where the Reliability Standard goes into effect at an earlier date.

EOP-012-3 and Definitions

Where approval by an applicable governmental authority is required, the standard and associated definitions shall become effective on the later of: (1) October 1, 2025; or (2) the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.

Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

Additional Implementation Information

EOP-012-3 Requirement R1

In the United States, entities were required to become compliant with Requirement R1 by the effective date of EOP-012-2 (October 1, 2024) in accordance with that implementation plan.

Entities shall perform their first periodic review under Reliability Standard EOP-012-3 Requirement R1 by no more than 60 months after the effective date of **EOP-012-2**.[1]

EOP-012-3 Requirement R2 – New Generating Units entering commercial operation on/after October 1, 2027

Entities shall become compliant with Requirement R2 no later than the commercial operations date for the applicable unit. Any Generator Cold Weather Constraint shall be submitted in accordance with the timeline provided in Requirement R8.

EOP-012-3 Requirement R3 – Existing and New Generating Units entering commercial operation before October 1, 2027

Entities beginning commercial operation after the effective date of EOP-012-3 shall become compliant with Requirement R3 no later than the commercial operations date for the applicable unit.

EOP-012-3 Requirement R8

Entities shall review all Generator Cold Weather Constraints previously declared under Reliability Standard EOP-012-2 for compliance with Reliability Standard EOP-012-3 Attachment 1 by the effective date. Each entity shall submit any previously declared Generator Cold Weather Constraints to the Compliance Enforcement Authority (CEA) no later than 45 days following the effective date of Reliability Standard EOP-012-3. Newly declared Generator Cold Weather Constraints shall be submitted in accordance with the timelines specified in Requirement R8.

EOP-012-3 Requirement R9

If applicable, entities shall review each Generator Cold Weather Constraint in accordance with Requirement R9 no later than 36 calendar months following validation by the Compliance Enforcement Authority.

Retirement Date of EOP-012-2

Reliability Standard EOP-012-2 shall be retired immediately prior to the effective date of Reliability Standard EOP-012-3 in the particular jurisdiction in which the revised standard is becoming effective.

[1] In jurisdictions where EOP-012-2 has not become effective, entities shall perform their first periodic review under Reliability Standard EOP-012-3 Requirement R1 by no later than five calendar years following the initial calculation of the Extreme Cold Weather Temperature, or as directed by the applicable governmental authority in the jurisdiction.

Implementation Plan

Project 2024-03 Revisions to EOP-012-2
Reliability Standard EOP-012-3

Applicable Standard(s)

- EOP-012-3 Extreme Cold Weather Preparedness and Operations

Requested Retirement(s)

- EOP-012-2 Extreme Cold Weather Preparedness and Operations

Applicable Entities

- Generator Owner
- Generator Operator

Background

The purpose of Project 2024-03 is to address the directives identified by FERC in its June 27, 2024 order approving Reliability Standard EOP-012-2 and directing further modifications. *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61,204 (2024) (June 2024 Order), available here. In that order, FERC found that further improvements are needed to address ambiguous language and other reliability gaps/implementation issues in the standard and related definitions to fully address issues first raised in the Commission's February 2023 Order approving EOP-012-1. *See N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094, PP 3-11 (2023) (February 2023 Order); *reh'g denied*, 183 FERC ¶ 62,034, *order on reh'g*, 183 FERC ¶ 61,222 (2023). In the June 2024 Order, FERC directed that NERC submit the modifications within nine months of the date of the order, or by March 27, 2025.

Proposed EOP-012-3 Requirement R1 is an existing EOP-012-2 requirement that consolidated and clarified requirements for each Generator Owner to calculate the Extreme Cold Weather Temperature for its generating unit location(s) and identify generating unit cold weather data, and to review these calculations and data every five years. Proposed EOP-012-3 Requirement R4 and R5 continue the current requirements under EOP-012-2 (with minimal clarifications in Requirement R4), that all Generator Owners develop cold weather preparedness plans and that all Generator Owners or Generator Operators (as appropriate) conduct annual training on those plans. Proposed EOP-012-3 clarifies which generating unit(s) are subject to the winter operations capability requirements of the standard (Requirements R2 and R3). Proposed EOP-012-3 Requirement R6 provides clarification regarding responses to a Generator Cold Weather Reliability Event that may require Corrective Action Plans (CAPs). Proposed EOP-012-3 Requirement R7 specifies timelines for the completion of Corrective Action Plans, consistent with the February 2023 Order and FERC directives in its June 2024 Order. The drafting team

crafted language to meet the concern of Generator Owners regarding timelines for units under consideration or development. The language reflects FERC's concern regarding applicability of Corrective Action Plans to the correct Generator Owner. Proposed EOP-012-3 Requirement R9 requires Generator Owners to review constraint declarations at least every 36 calendar months, or as needed, when a change of status occurs and ensures operating limitations caused by the constraints are clearly identified. The revised *Glossary* term for Generator Cold Weather Constraint, and new Attachment 1 both clarify the circumstances under which Generator Owners may declare Generator Cold Weather Constraints.

For additional information on the FERC Order directives addressed in proposed Reliability Standard EOP-012-3, see the Consideration of Directives, available on the Project 2024-03 project page.

General Considerations

This implementation plan reflects past consideration that entities need time to develop, implement, and maintain cold weather plans; identify Generator Cold Weather Critical Components, and identify freeze protection measures. The implementation plan also considers the FERC directives regarding the need for an accelerated effective date of directed changes and abbreviated implementation periods for generator winterization measures. FERC has repeatedly expressed an urgency in completing cold weather Reliability Standards and having them implemented in a timely manner to address the risks cold weather events present to the reliability of the Bulk-Power System. FERC noted the five core directives to NERC in the June 2024 Order are not new issues, but rather targeted modifications necessary to fully address issues identified in FERC's prior February 2023 Order. *See* June 2024 Order at P 30.

~~In consideration of these factors, and to ensure entities have sufficient notice of their revised obligations under Reliability Standard EOP-012-3, the proposed implementation plan provides that the standard shall become effective on the later of October 1, 2025, which is the date Reliability Standard EOP-012-2 will be fully enforceable in the United States, or three months following regulatory approval.~~

The drafting team determined that later phased-in compliance dates were not necessary for the revised requirements in EOP-012-3, as the practical impact of implementing the proposed changes, in light of the regulatory history described above, is not expected to be significant:

- For revised Requirement R2, units further into design or construction have separate requirements from those units in the early phases of design: the units further along in the design/construction phase are allowed to develop, implement, and complete Corrective Action Plans to meet the more rigorous requirements for new generating units, whereas units in the early stages of design are expected to meet the more rigorous requirements unless a Generator Cold Weather Constraint applies. Additional time is not needed to implement this change.

- For revised Requirement R6, relating to Generator Cold Weather Reliability Events, the language reflects the FERC directives regarding Corrective Action Plans, Corrective Action Plan extensions, and consideration of the applicability of corrective actions across a fleet for Generation Owners that had a generating unit(s) that experienced a Generator Cold Weather Reliability Event. Additional time to implement these changes is not needed, given the conditions in which a Corrective Action Plan may be needed for a Generator Cold Weather Reliability Event.
- For revised Requirement R7, the drafting team clarified the applicability of Corrective Action Plan requirements and provided Corrective Action Plan extension request language similar to that found in Reliability Standard TPL-007-4 to address the June 2024 Order. Additional guidance is provided below.

In consideration of these factors, and to ensure entities have sufficient notice of their revised obligations under Reliability Standard EOP-012-3, the proposed implementation plan provides that the standard shall become effective on the later of October 1, 2025, which is the date Reliability Standard EOP-012-2 will be fully enforceable in the United States, or three months following regulatory approval.

Additional guidance is provided to aid in the orderly implementation of the standard as entities transition from compliance with Reliability Standard EOP-012-2 to Reliability Standard EOP-012-3.

Effective Date

The effective dates for the proposed Reliability Standards are provided below. Where the drafting team identified or recognized the need for a longer implementation period for compliance with a particular section of a proposed Reliability Standard (i.e., an entire Requirement or a portion thereof), the additional time for compliance with that section is specified below. The phased-in compliance date for those particular sections represents the date that entities must be compliant with that particular section of the Reliability Standard, even where the Reliability Standard goes into effect at an earlier date.

EOP-012-3 and Definitions

Where approval by an applicable governmental authority is required, the standard and associated definitions shall become effective on the later of: (1) October 1, 2025; or (2) the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.

Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

Additional Implementation Information

EOP-012-3 Requirement R1

In the United States, entities were required to become compliant with Requirement R1 by the effective date of EOP-012-2 (October 1, 2024) in accordance with that implementation plan. Entities shall perform their first periodic review under Reliability Standard EOP-012-3 Requirement R1 by no more than 60 months after the effective date of **EOP-012-2**.[1]

EOP-012-3 Requirement R2 – New Generating Units entering commercial operation on/after October 1, 2027

Entities shall become compliant with Requirement R2 no later than the commercial operations date for the applicable unit. Any Generator Cold Weather Constraint shall be submitted in accordance with the timeline provided in Requirement R8.

EOP-012-3 Requirement R3 – Existing and New Generating Units entering commercial operation before October 1, 2027

Entities beginning commercial operation after the effective date of EOP-012-3 shall become compliant with Requirement R3 no later than the commercial operations date for the applicable unit.

EOP-012-3 Requirement R8

Entities shall review all Generator Cold Weather Constraints previously declared under Reliability Standard EOP-012-2 for compliance with Reliability Standard EOP-012-3 Attachment 1 by the effective date. Each entity shall submit any previously declared Generator Cold Weather Constraints to the Compliance Enforcement Authority (CEA) no later than 45 days following the effective date of Reliability Standard EOP-012-3. Newly declared Generator Cold Weather Constraints shall be submitted in accordance with the timelines specified in Requirement R8.

EOP-012-3 Requirement R9

If applicable, entities shall review each Generator Cold Weather Constraint in accordance with Requirement R9 no later than 36 calendar months following validation by the Compliance Enforcement Authority.

Retirement Date of EOP-012-2

Reliability Standard EOP-012-2 shall be retired immediately prior to the effective date of Reliability Standard EOP-012-3 in the particular jurisdiction in which the revised standard is becoming effective.

[1] In jurisdictions where EOP-012-2 has not become effective, entities shall perform their first periodic review under Reliability Standard EOP-012-3 Requirement R1 by no later than five calendar years following the initial calculation of the Extreme Cold Weather Temperature, or as directed by the applicable governmental authority in the jurisdiction.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Technical Rationale

Project 2024-03 Revisions to EOP-012-2
Reliability Standard EOP-012-3 | January 2025

EOP-012-3 – Extreme Cold Weather Preparedness and Operations

Introduction

This document explains the technical rationale and justification for the proposed Reliability Standard EOP-012-3. It provides stakeholders and the ERO Enterprise with an understanding of the technology and technical requirements in the Reliability Standard. This Technical Rationale and Justification for EOP-012-3 is not a Reliability Standard and should not be considered mandatory and enforceable.

Background

From February 8 through February 20, 2021, extreme cold weather and precipitation caused large numbers of generating units to experience outages, derates or failures to start, resulting in energy and transmission emergencies (referred to as the "Event"). The total Event firm load shed was the largest controlled firm load shed event in U.S. history and was the third largest in quantity of outaged megawatts (MW) of load after the August 2003 Northeast blackout and the August 1996 West Coast blackout. The Event was most severe from February 15 through February 18, 2021, and it contributed to power outages affecting millions of electricity customers throughout the regions of ERCOT, SPP, and MISO South. Additionally, the February 2021 event is the fourth cold weather event in the past 10 years, which jeopardized Bulk Power System (BPS) reliability. A joint inquiry was conducted to discover reliability-related findings and develop recommendations from Federal Energy Regulatory Commission (FERC), NERC, and Regional Entity staff. The FERC, NERC, and Regional Entity Staff Report about the February 2021 Cold Weather Outages[1] ("Joint Inquiry Report") was published on November 16, 2021.

Project 2021-07 was a two-phase project to address the 10 sub-recommendations in Key Recommendation 1 of the Joint Inquiry Report for new or enhanced NERC Reliability Standards. Reliability Standard EOP-012-1 was originally developed to address Recommendations 1d, 1e, and 1f of the Joint Inquiry Report through new and enhanced requirements for generator preparedness for extreme cold weather conditions. Reliability Standard EOP-012-2 was revised to address Key Recommendations 1a, 1b, and 1c as well as the FERC directives in the February 2023 Order approving the Phase 1 standards EOP-011-3 and EOP-012-1.[2] Reliability Standard EOP-012-3 is being revised to address FERC directives in the June 2024 Order approving EOP-011-4 and EOP-012-2[3].

1 The February 2021 Cold Weather Outages in Texas and the South Central United States | FERC, NERC and Regional Entity Staff Report | Federal Energy Regulatory Commission

2 *N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094 (2023) (FERC Order), *notice denying reh'g and providing for further consideration*, 183 FERC ¶ 62,034 (2023).

3 *N.AM.Elec.Reliability Corp.*, 187 FERC ¶ 61,204 (FERC Order)

Defined Terms

Previous drafting teams (DTs) developed five defined terms to be added to the NERC Glossary of Terms to make the requirements easier to understand. Project 2024-03 updated the term "Generator Cold Weather Constraint" to meet the FERC directives in the June 2024 Order and provided additional language to clarify issues noted during the development of EOP-012-3, 2024 Small Group Advisory Session(s), and input received during outreach with industry. The five terms are:

Extreme Cold Weather Temperature

The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 1/1/2000 through the date the temperature is calculated.

The definition of Extreme Cold Weather Temperature (ECWT) was developed by the 2021-07 DT to provide clarity to the Generator Owner (GO) on determining what temperature triggers the requirement obligations. Each GO should select a reliable source of data from a recording location near the plant to determine their ECWT. Sources could include, for example, the National Weather Service (NWS) or National Oceanographic and Atmospheric Administration (NOAA) weather stations, Federal Aviation Administration (FAA) weather stations, or Environment and Climate Change Canada location for Canadian entities[4], etc. NOAA's National Centers for Environmental Information provides Climate Data Online (CDO) as a free resource that includes quality-controlled weather data and 30-year Climate Normals[5]. In general, GOs should use the location nearest the plant, but may select a further location if geographic or local climatic patterns make a further location more representative of the weather at the generating unit. GOs may use on-site weather stations if data, which reasonably matches reliable nearby off-site sources since January 1, 2000, is available. The starting period chosen by the 2021-07 DT to gather data to determine the lowest temperatures that occur near a facility is based on the completion of the modernization of the National Weather Service project known as MAR (Modernization and Associated Restructuring). This project was completed in the year 2000. In general, the National Weather Service modernization provides weather data to be available at most large airports. This will make it fairly accessible for companies to gather data and perform the required analysis. The December through February timeframe was selected to correspond to the meteorological winter, as defined by NOAA.[6]

The 2021-07 DT discussed methods for determining an ECWT with engineering design professionals, and it was determined that it is typical engineering practice to use a statistical approach to determine the design temperature when implementing generation facility freeze protection measures. The 2021-07 DT determined that only winter temperature values (i.e. between December and February) shall be used for the statistical approach and based on analysis of multiple weather data sites. It was determined that by using the lowest 0.2 percentile, there will be sufficient data points to ensure that a single hour at a temperature that may not be accurate, or may be a statistical anomaly, doesn't result in an overly conservative design or preclude the ability of the GO to use historical operating data to prove compliance to the requirements. The 2021-07 DT selected the 0.2 percentile of winter month temperatures since 1/1/2000 to identify a temperature which has been rarely surpassed, but which allows some margin for a

4 Environment and Climate Change Canada - Canada.ca
5 U.S. Climate Normals | National Centers for Environmental Information (NCEI) (noaa.gov)
6 Meteorological Versus Astronomical Seasons | News | National Centers for Environmental Information (NCEI) (noaa.gov)

GO to have previously demonstrated successful operation. The 2021-07 DT considered using the lowest recorded hourly ambient temperature, but upon further review of the historical weather data and generally accepted design principles, determined that the statistical approach to setting the ECWT for a site's location was more reasonable.

The 2024-03 DT recognized comments and concerns raised during the 2024 Small Group Advisory Session on cold weather preparedness regarding application of the ECWT calculation if hourly temperature values were questionable. If complete data sets are not available (e.g., data is corrupt or missing) at a single weather station back to January 1, 2000, the GO should document the methodology they use to determine their ECWT, such as appending data from multiple weather stations or selecting a complete or partial data set from a weather station further away from the facility. The 2021-07 and 2024-03 DTs realized that a complete data set (i.e., all hours of every day of every year for the months of December, January, and February) may not be available due to a variety of technical reasons. To that point, the GO's approach in handling the missing/corrupt data should be documented in their methodology and available to Compliance Monitoring Enforcement Program (CMEP) staff as needed. To accommodate concerns raised by industry, the 2024-03 DT felt additional clarification was needed to address missing data and set an expectation for entities to meet when reviewing the inputs to the ECWT calculations within Requirement R1. Entities should be able to explain the reasoning behind the substitution of missing or corrupt data points.

It has been noted by the industry that there may be the possibility of missing temperature data utilized for the ECWT calculation. The 2024-03 DT discussed data completeness concerns and, after considering the likely variability in such hourly temperature data sets across North America, ultimately chose not to establish a requirement regarding the size of the data set necessary to support an accurate ECWT determination. The 2024-03 DT understands the entity may very well have an overall approach to missing data versus a generating unit-by-unit approach. By the nature of the percentile function, significant data loss may not change the ECWT value. The key is where the data is missing in relationship to the ECWT determined value. Note that compliance obligations when the ECWT is determined near 32 degrees Fahrenheit, tend to dictate the need for a more rigorous level of effort needed to help determine possible impacts of missing temperature data. Missing hourly temperature values above the ECWT has limited impact to the determination. However, missing hourly temperature values below the ECWT can impact the ECWT determination value. For example, the 0.2 percentile of 50,000 hourly values equates to 100 hourly values (in this case the lowest recorded hourly temperatures.) If there are missing hourly values that would have been included in the list of the lowest 100 hourly temperature values, those values should be explained by the entity and may warrant further review. Missing data in the lowest 100 values effectively has the potential of moving the ECWT value higher but that is dependent upon the data set. This simplified example is intended to demonstrate a principle; not establish a fixed number of lowest temperature values of concern. Any data set with missing or invalid hourly temperature values recorded during the coldest periods since January 1, 2000 should be carefully evaluated to ensure that any adjustments utilized on those particular values are properly addressed in a transparent and logical way. Please reference the Calculating Extreme Cold Weather Temperature document drafted by the 2021-07 DT and updated by the 2024-03 DT for an example of how to calculate the ECWT[7].

7 Report (nerc.com)

Generator Cold Weather Critical Component

Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

The 2021-07 DT felt the best method to address where freeze protection measures should be implemented was to define a term which specifies a subset of components that may be susceptible to freezing and are critical to the operation of generating units. GOs should consider previous freeze-related issues experienced by the generating unit(s), as well as actions taken to mitigate those freeze-related issues, when establishing its list of Cold Weather Critical Components. The 2021-07 DT also felt it is appropriate to specifically exclude components that are not susceptible to freezing due to being inside heated buildings that maintain the interior temperature above freezing.

The 2021-07 DT's intent with regard to the language "that is under the Generator's Owner's control" was to clearly delineate that cold weather events external to the generation site such as loss of fuel supply or loss of auxiliary power to the site that resulted in a Generator Cold Weather Reliability Event (see definition below) would not be subject to this standard. Furthermore, ice buildup on transmission lines and/or high voltage lines between the generating station and point of interconnection with the Transmission Owner would not constitute a freezing condition in the context of this Standard, and therefore, these lines would not be considered a Generator Cold Weather Critical Component.

The 2021-07 DT's intent with the use of the phrase "permanent building" is to refer to a structure that is in place year-round, shall accommodate personnel entry, and has a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit for the purpose of protecting components from freezing (e.g. heated container that protects inverter-based resources or battery energy systems). The 2024-03 DT recognized comments and concerns raised during the 2024 Small Group Advisory Session on cold weather preparedness regarding heating of the "permanent building." The HVAC/heating system is not a freeze protection measure in terms of being included in the cold weather preparedness plan as it is not protecting a Generator Cold Weather Critical Component (per the definition) nor is it a Generator Cold Weather Critical Component. The 2024-03 DT expects the HVAC/heating system to be part of routine maintenance and monitoring to ensure that the heated building remains above 32 degrees Fahrenheit.

Fixed Fuel Supply Component

Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

The 2021-07 DT wanted to clarify the boundaries of responsibility for the GO as it relates to sites having fuel handling equipment within their control and responsibility to provide freeze protection. The intent of

this definition is to clarify that mobile equipment is not part of this requirement, but permanent fixed equipment impacting fuel delivery needed for generation is included.

Generator Cold Weather Reliability Event

One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

Key Recommendation 1d: To require Generator Owners that experience outages, failures to start, or derates due to freezing to review the generating unit's outage, failure to start, or derate and develop and implement a corrective action plan (CAP) for the identified equipment, and evaluate whether the CAP applies to similar equipment for its other generating units. Based on the evaluation, the Generator Owner will either revise its cold weather preparedness plan to apply the CAP to the similar equipment, or explain in a declaration (a) why no revisions to the cold weather preparedness plan are appropriate, and (b) that no further corrective actions will be taken. The standard drafting team should specify the specific timing for the CAP to be developed and implemented after the outage, derate, or failure to start, but the CAP should be developed as quickly as possible, and be completed by no later than the beginning of the next winter season.

The Key Recommendation from the Joint Inquiry Report recommends a Reliability Standard that requires GOs to develop a Corrective Action Plan for generating units that experience outages, failures to starts, or derates due to freezing. The Joint Inquiry Report identifies that most of the outages and derates in the February 2021 event were due to freezing of instrumentation, transmitters, sensing lines, or wind turbine blades (p 166 in the Joint Inquiry Report). As such, the 2021-07 DT followed the Joint Inquiry Report recommendation to require a Corrective Action Plan when the apparent cause of the event is freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, or freezing rain) on equipment. The 2021-07 DT felt that it was important to clearly call out freezing precipitation as these events were included in the outages and derates that identified as freezing in the Joint Inquiry Report. Furthermore, Key Recommendation 1c of the report requires GOs to account for the effect of precipitation. The 2021-07 DT has developed parameters around these events to clarify a reasonable baseline of what level of derate qualifies as an event, and provide additional language to identify what constitutes a start-up failure. With the additional clarifications, the 2021-07 DT determined that the standard would benefit from a defined term, to clearly and efficiently state what constitutes an event. The result is a new defined term, Generator Cold Weather Reliability Event, that defines the circumstances for which a Corrective Action Plan is required (i.e., when a freezing event affects the equipment within the control of the GO). The defined term will make the standard easier to understand and implement by providing clear and reasonable factors to determine whether the impact of an event requires mitigation. The 2021-07 DT is

using the definition of apparent as defined in the Webster's dictionary as "clear or manifest to the understanding".

Note that the 2024-03 DT provided additional language to alleviate concerns regarding the administrative nature of developing Corrective Action Plans specifically for similar noted issues occurring at one or more locations (e.g., freezing precipitation on wind turbines). Care should be taken if updating existing Corrective Action Plans for additional units especially in terms of effectively capturing the actions and timetables applicable to the additional units.

The Corrective Action Plan requirement applies to any forced outage due to freezing, regardless of duration. Derates, which are short lived (specified as four hours by the 2021-07 DT) or of small capacity impact (specified as less than 20 MW by the 2021-07 DT, which roughly corresponds with the threshold for Bulk Electric System (BES) impacting generation units), are excluded from the Corrective Action Plan requirement to limit the administrative burden to GOs for events that are minimally impacting to the BES. Also excluded are proactive operational actions to limit the potential of forced outages or derates. It should be noted that nothing in this standard prevents a GO from taking its own corrective actions resulting from such events. Startup failures for conventional generation are defined using the Generating Availability Data System (GADS) definition with the removal of "following an outage or reserve shutdown", since reserve shutdown is defined differently by NERC in GADS than it is by some of the Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs). From the GADS data reporting instructions, the startup period for each unit is determined by the operating company. It is unique for each unit and may depend on the condition of the unit at the time of startup (cold, warm, or hot). A typical unit startup occurs in three phases: warm up, synchronization, and ramp up. NERC defines a startup period to begin with the command to start and end when the unit is synchronized. A startup failure begins when a problem, preventing the unit from synchronizing, occurs. The startup failure ends when the unit is synchronized, another startup failure occurs, or the unit enters another permissible state.

The 2021-07 DT determined that Corrective Action Plans will be required for any freezing event that occurs at temperatures above the generator site's ECWT. By using the site's ECWT, as opposed to the generator unit minimum temperature as defined by the GO in Requirement R1 Part 1.2.2 as the threshold, this achieves the following:

- Provides a consistent basis for the temperature at which CAPS are required for all GOs
- Provides a consistent basis for when Corrective Action Plans are required for all generation types
- Provides a consistent basis for when Corrective Action Plans are required regardless of the level of effort that GOs may have applied to-date winterizing their generators such that they can operate to the ECWT that their sites will reasonably experience
- Removes any incentive (perceived or real) to not further winterize GOs generating sites to meet the ECWT at the GO site by not providing a window where one site might not be subject to the Corrective Action Plan requirement while sites in the same vicinity experiencing the same temperatures are subject to this requirement

- Removes any disincentive for GOs to design the units to operate well below the ECWT for a site by not requiring them to perform Corrective Action Plans while sites in the same vicinity experiencing the same temperatures are subject to this requirement

Generator Cold Weather Constraint

Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.

The 2024-03 DT reviewed the material from the June 2024 Order when determining how best to update the Generator Cold Weather Constraint definition. The 2024-03 DT relied upon industry and FERC guidance as a basis for updating the definition language and the process captured in Attachment 1 of EOP-012-3. The 2024-03 DT also ensured that constraint language would be fully captured within the Standard itself through Attachment 1.

The 2024-03 DT felt that an Attachment that included specific language further explaining Generator Cold Weather Constraints with discrete known Generator Cold Weather Constraints and other case-by-case Generator Cold Weather Constraints meets the FERC (and industry) expectations to provide unambiguous, objective, and auditable language. The 2024-03 DT discussed providing clarity with examples knowing that additional instances or conditions that may be considered a Generator Cold Weather Constraint may exist.

Per the FERC Order, NERC staff are responsible to provide a process describing the receipt, evaluation, approval (as needed), and validation of Generator Cold Weather Constraints. This process is captured in the Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") document.

Attachment 1 contains a non-comprehensive list of known Generator Cold Weather Constraints as well as a list of situations, circumstances, and criteria that may constitute a Generator Cold Weather Constraint. The GO **must** submit all Generator Cold Weather Constraints to the Compliance Enforcement Authority (CEA) for approval, regardless of which category it might fall into.

Once a declaration is approved by the CEA, it is considered valid. It is the GO's responsibility to document, in the Generator Cold Weather Constraint declaration, the circumstances and reasons why the modification needed to address the freeze protection measure(s) is not being implemented. A Generator Cold Weather Constraint declaration, that no further corrective actions will be taken, is expected to be used sparingly.

The 2024-03 DT is intentionally leaving room for additional instances of Generator Cold Weather Constraints as it would be impossible to foresee every potential circumstance that could possibly necessitate a review of potential freeze protection technologies across the breadth of the United States and Canada and the breadth of generating unit types and ages that fall under this Standard.

Furthermore, the 2024-03 DT wants to ensure the Standard language supports the adoption of new freeze protection measure practices, methods, or technologies while not immediately requiring a new freeze protection measure practice, method, or technology to be implemented industry-wide when a leading utility pilots a novel approach, as this would be a disincentive to utilities piloting new technologies. The 2024-03 DT encourages additional studying and implementation of freeze protection measures to remove Generator Cold Weather Constraints as appropriate over time.

In the June 2024 Order, there was a directive to change the frequency of Generator Cold Weather Constraint reviews to facilitate consideration of new freeze protection measure technologies to reduce the risk resulting from the need for a Generator Cold Weather Constraint. That change is captured in Requirement R9 discussed later in this Technical Rationale document.

Facilities

After reviewing the reference material and the efforts of the 2021-07 DT, the 2024-03 DT determined that EOP-012-3 should continue to apply to all BES generating units in order to ensure consistency in extreme cold weather preparedness. The Applicability section first defines "generating unit" as a BES resource. The NERC Glossary of Terms provides the foundation for what BES resources are included in the definition (see Inclusions I2 through I4). Additionally, Blackstart Resources are also specifically declared subject to the winterization requirements. Such Blackstart Resources, consistent with the NERC Glossary of Terms, are those units designated in the Transmission Operator's (TOP) restoration plans. Proposed EOP-012-3 clarifies which Facilities and their Generator Cold Weather Critical Components are subject to implementing freeze protection measures through specific language in Requirements R2 and R3. The 2024-03 DT briefly discussed GO Category 2 Inverter-Based Resource (IBR) applicability to EOP-012-3 but it was noted the applicability is under review as part of the Registration of IBR Work Plan so no changes were presented.

Rationale for Requirement R1

The Project 2024-03's Technical Rationale language for Requirement R1 did not substantially change from 2021-07 DT language and, as such, use of DT below is referencing 2021-07 DT. Much of the criteria of R1 is carried over from the previously approved EOP-011 Standard and requires the GO to document several cold weather performance parameters for the unit. This information is valuable, and in some cases, must be shared with other entities. For Requirement R1 Part 1.1, the GO is required to calculate the Extreme Cold Weather Temperature (ECWT) for each unit using a reliable source of data (See the supporting document "Calculating Extreme Cold Weather Temperature"). The DT believes that the GO is in the best position to select the most representative weather information relative to its generating unit. The ECWT will be updated if a new lower ECWT is determined under the periodic review requirement of R1. Defining the operating limitations in Requirement R1 Part 1.2.1 will make affected personnel more aware of unit capabilities and constraints as well as systems and practices that may be necessary to ensure reliability in cold weather, particularly when alternative fuels are involved. In addition, the unit minimum temperature identified in Requirement R1 Part 1.2.2 is used to demonstrate compliance with Requirement R3 for existing units. The DT chose one hour of historical operating data recognizing there is extremely limited historical operating data available for a unit below their ECWT. This was not to infer the DT expects that existing generation will only reliably operate for one hour during an extreme cold weather event. The information contained within Requirement R1 Part 1.2 is required to be requested by the BAs in TOP-003 to make sure they have the most accurate unit performance information possible for their reliability analysis during the winter season. It is critical, especially if a Corrective Action Plan, extension request for a Corrective Action Plan, or a Generator Cold Weather Constraint declaration is in effect, that the GO keep Requirement R1 Part 1.2 information updated with those entities requiring said information. The 2024-03 DT did not add a notification Requirement to EOP-012-3 as TOP-003 and IRO-010 obligate the applicable entities (Balancing Authority (BA), Reliability Coordinator (RC), and Transmission Operator (TOP)) to have "*Provisions for notification of BES generating unit(s) during local forecasted cold weather to include*"

Requirement R1 Part 1.2 information. BAs, RCs, and TOPs should have already reviewed their data specifications with regards to EOP-012. The flexibility that industry has required in the determination of data specifications - -were limited by industry approved Standard language regarding cold weather data and attributes. BAs, RCs, and TOPs should ensure complete coverage and timeliness of Requirement R1 Part 1.2 data submission within their data specifications especially during local forecasted cold weather.

It is recognized that the determination of a single unit minimum temperature is of limited value if applied without consideration of the other ambient conditions under which it was determined, that is, wind and precipitation. Consideration of wind and precipitation, along with the minimum temperature, provides a greater understanding of the potential generating unit capability for cold weather resource planning. The Standard requires that the GO include wind and precipitation data with their generating unit minimum temperature data when the data is available. The impact of deviations from this known temperature/wind/precipitation stated point are expected to be evaluated qualitatively. For example, if the historical minimum temperature occurred at low wind and dry conditions, and actual future cold weather event expected conditions are high winds with precipitation, planning personnel will recognize that a specific unit may not achieve the minimum temperature and can arrange for additional resources. The opposite also applies, i.e., if a design minimum temperature assumes some level of wind and precipitation and actual cold weather expectations are for low wind and dry conditions, planning personnel will recognize that there is increased likelihood that a generation resource may continue to be available below its minimum temperature. If no information about wind or precipitation is known, wind and precipitation are assumed to be zero at the minimum temperature until further information is obtained. The 2024-03 DT did provide updated language within the “Defined Terms” section of this Technical Rationale document to capture concerns regarding ECWT data availability.

Rationale for Requirement R2

The Joint Inquiry Report Key Recommendation 1f referenced recommendation 12 of the 2011 report[8] suggesting that consideration should be given to designing all new generation plants and designing modifications to existing plants (unless committed solely for summer peaking purposes) to be able to perform at the lowest recorded ambient temperature for the nearest location for which historical weather data is available.

In developing the original version of the EOP-012 Reliability Standard, Reliability Standard EOP-012-1, the Project 2021-07 DT determined to impose different cold weather capability requirements for new generation compared to existing generation. Consistent with Key Recommendation 1f of the February 2021 Event Report, GOs would be required to design new units to operate to a specified ambient temperature (the ECWT) and weather conditions for the location, accounting for the cooling effects of wind. Due to the difficulty of performing the same level of design analysis on existing generation as on new generation, the high threshold of the ECWT, and the expected availability of historical data to

8 https://www.nerc.com/pa/rrm/ea/February%202011%20Southwest%20Cold%20Weather%20Event/SW_Cold_Weather_Event_Final.pdf

support sustained operations at that ECWT, the Project 2021-07 DT determined to impose less stringent requirements for retrofitting existing generating units. The Project 2021-07 DT initially specified the "effective date of the requirement," which would be determined in accordance with the EOP-012-1 Implementation Plan, as establishing which set of generators would be "grandfathered" and subject to the less stringent requirements, and which generators would be subject to the more stringent requirements for new generation.

The 2021-07 DT chose 12 hours of continuous operation because it is a typical length of the nighttime in winter in most regions of the US and Canada and typically include the hours with the coldest experienced temperatures. The 2021-07 DT was of the opinion that tying the requirement to the 12-hour period would provide a reasonable level of reliability during a cold weather event. The 2021-07 DT chose a concurrent sustained 20 mph wind speed after an evaluation using the wind chill formula developed by the NWS in the United States. Though wind chill temperature is not an exact science, it is widely understood to reflect the **non-linear increased rate of convective heat loss due to air moving at different velocities**. Commonly available charts show wind chill temperatures as a function of actual air temperature at various wind speeds. Approximately 2/3 of the wind chill temperature drop between 0–60 mph is achieved at 20 mph. Using the NWS chart, this holds true for still air temperatures starting at 40ºF and dropping in 20-degree increments to -40°F. Further, 20 mph is a wind speed commonly experienced across the ERO and yet appropriately higher than the approximate average wind speeds in the United States and Canada, 6-12 mph and 8-11 mph respectively. GOs should consider that wind concurrent with cold temperatures will decrease the amount of time for a unit's equipment (e.g., sensing lines) to reach the ambient temperature. While this may not be readily apparent in all cases, operational history of operating at a certain temperature may not equate (in terms of capability or duration of operation) to operating at that same temperature with a 20 mph (32 km/h) wind speed. Providing freeze protection measures, such as tarps or temporary wind block structures, may support the ability to operate longer during extreme cold weather. Each of these three probabilistically infrequent conditions (the ECWT, a steady 20 mph (32 km/h) wind, and a duration of 12 continuous hours at these conditions) is, in and of itself, conservative. When they have their effects combined, it results in a requirement that will significantly contribute to BES reliability during extreme cold weather conditions.

In developing Reliability Standard EOP-012-2 and a shorter Implementation Plan to meet the directives of the FERC February 2023 Order, the Project 2021-07 determined to replace "effective date of this requirement" with a date certain, October 1, 2027. In establishing this date, the 2021-07 DT considered the original proposed Implementation Plan for Reliability Standard EOP-012-1 which would have had this requirement effective April 1, 2028, FERC's directives to shorten this plan as it related to existing generation, the need to ensure generation is prepared for cold weather, as well as the fact that new generation coming online prior to October 1, 2027 is likely to be significantly advanced past the design phase when incorporating measures to provide capability in sustained wind conditions would be most cost effective and reasonable. Reliability Standard EOP-012-2 introduced the option for owners of new

generating units to develop a Corrective Action Plan, in the event they could not meet the more stringent requirements for new generation upon entering commercial operation on or after October 1, 2027.

In the June 2024 Order (paragraph 72), FERC directed NERC to modify EOP-012-2 to address Corrective Action Plans for new generating units. The Commission stated that, while it was persuaded by NERC's rationale that there needs to be allowances made for units that are well into their construction phase to complete corrective action plans for elements already designed, it was concerned that Reliability Standard EOP-012-2 did not clearly differentiate between projects in an advanced stage of construction and those in a lesser phase of construction. The Commission found that "generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation." Based on this finding, the Commission directed NERC to revise the EOP-012 standard "to clarify that any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date."

In developing the posted draft of proposed EOP-012-3, the Standards Committee considered the FERC directive and the concern underlying that directive – that EOP-012-2 did not clearly differentiate between projects advanced in construction and those that were not.

It was thought that units that were coming online the first winter of the new requirements (winter 2027-2028), but that were designed prior to June 2023, would be significantly far in development and construction, and this represented a reasonable demarcation point for the Corrective Action Plan option.

Under proposed EOP-012-3 Requirement R2, **most** new generation entering commercial operation on or after October 1, 2027 will either need to: (1) meet the more stringent freeze protection measures called for new generation; or (2) declare a constraint that prevents them from doing so in accordance with Requirement R8. As concerns were raised about requiring Corrective Action Plans of GOs before they may be formally subject to compliance with standards, there is no requirement for GOs to complete Corrective Action Plans ahead of entering commercial operation in Requirement R2. This is consistent with the underlying intent of the June 2024 Order and more closely resembles the original EOP-012-1 requirements for new generation.

However, the Project 2024-03 DT believed that some allowance needed to be made for the units that were thought to be far along in the construction process, using designs that may have predated the development and approval of the EOP-012 standard and which may not meet the standard's requirements for new generation without significant additional work. The Project 2024-03 DT also considered that some of these generating units may even be fully constructed but not yet in "commercial operation" by October 1, 2027 due to the varying requirements for achieving that designation in different regions. While the Project 2024-03 DT did not believe many GOs developing new generating units would be in this position, the Project 2024-03 DT was cognizant of the burden eliminating the Corrective Action Plan option at this stage could place on these entities, especially when combined with the proposed

changes to the Generator Cold Weather Constraint criteria. The drafting team was also concerned that if such GOs felt they had no choice but to delay the commercial operation date for their new units past winter 2027-2028 to meet the new requirements, it could reduce needed generation at a time when NERC has projected an increased risk of reserve margin shortfalls in several areas of North America (see 2024 LTRA).

The Project 2024-03 DT considered several options to both address the FERC directive and account for this identified concern. These options included extending the "grandfathering" date past October 1, 2027 and redefining "commercial operation" to a less specific phrase, such as "in operation". However, the Project 2024-03 DT determined that maintaining the October 1, 2027 date as the "grandfathering" date was important in the interest of raising the bar for reliability in future cold weather seasons. It did not identify any compelling reason to change either that date or the existing measure of "commercial operation" from the previous versions of the standard. Rather, the Project 2024-03 DT concluded a time-limited Corrective Action Plan option for the first winter season the more stringent requirements for new generation are in effect (i.e. winter 2027-2028) was the most appropriate option to address the issue. This option would clearly separate the units that were far along in construction, and for whom such a limited option might be appropriate and consistent with the underlying findings in the June 2024 Order, and those that were not far along in construction.

In reviewing the Project 2024-03 DT's determination, the Standards Committee, in carrying out its responsibilities under Section 321 of the NERC Rules of Procedure, determined to carry forward this limited Corrective Action Plan option, with some modifications as needed to clarify the scope and intent in response to stakeholder comments.

Under proposed Requirement R2 Part 2.1, GOs of certain new generating units would have the option to develop a Corrective Action Plan if they are unable to implement the required freeze protection measures for new generation before entering commercial operation, and a Generator Cold Weather Constraint would not apply. For this option to apply, the GO must have first contractually committed to the design criteria for the unit before June 29, 2023, and the unit must first enter commercial operation between October 1, 2027 and March 31, 2028 (inclusive of the start and end dates). The Corrective Action Plan must be completed by April 1, 2028, a date which reflects consideration of NERC's original proposed effective date of EOP-012-1 requirements for new generation.[9]

It is important to note that this is simply an additional *option* for such GO, intended to enable them to enter commercial operation sooner and begin supplying needed power to the grid faster than if they were required to delay their commercial operation dates to provide the required capability.

The June 29, 2023 date represents the date by which the Project 2024-03 DT concluded that GOs would have had reasonable certainty regarding the freeze protection requirements for new generation under

9 Under NERC's original proposed implementation plan for EOP-012-1, this requirement for new generation would have become effective April 1, 2028. In its February 2023 Order, FERC directed NERC to modify the proposed EOP-012-1 implementation plan to reflect the urgency of the need to implement the standard, including to shorten the 60-month implementation plan for existing generating units. Reliability Standard EOP-012-2 shortened these dates and established October 1, 2027 as the "grandfathering" date for new generation.

the EOP-012 standard and should have begun including them in their design criteria for new generating units. FERC issued its order approving EOP-012-1 and the definition of Extreme Cold Weather Temperature in February 2023; however, the Project 2024-03 DT considered comments stating that there was still some regulatory uncertainty past this time, as several entities had filed for rehearing on various aspects of the standard. On June 29, 2023, FERC issued an order addressing arguments raised on rehearing, resolving any remaining uncertainty regarding the standard to which new generation would be expected to perform in the future (see FERC decision).

The Project 2024-03 DT and the Standards Committee considered stakeholder comments that this "designed by" date should instead be the effective date of the EOP-012-2 standard, October 1, 2024. Specifically, there were some stakeholder concerns that the standard would be applied retroactively to a date before the first version of the EOP-012 Reliability Standard became effective on October 1, 2024. However, using the EOP-012 effective date for this particular measure would not be consistent with the underlying intent of several directives the February 2023 and June 2024 Orders, which was to speed up the process by which generating units are prepared for the known reliability risks of extreme cold weather. Further, this June 29, 2023 date does not represent a compliance date, but rather the date by which entities would have been on reasonable notice of the specific nature of their new obligations and could take the appropriate steps to change their designs to facilitate compliance upon entering commercial operation several years later. In determining the appropriate demarcation point for the Corrective Action Plan option for new generation, the drafting team determined that units designed after this date should not be eligible.

Nevertheless, to provide further clarity as to intent and enforceability, the Standards Committee added language to clarify that, for this option to apply, the unit must first enter commercial operation between October 1, 2027 and March 31, 2028. (Recall that Requirement R2 applies only to generation entering commercial operation on or before October 1, 2027 – there is no provision for retroactive applicability.)

In summary, Requirement R2 Part 2.1 specifies that, for certain entities that undertook certain design steps before June 29, 2023 before the scope of new requirements became clear, those entities have the option of developing a Corrective Action Plan to achieve the required capability during their first winter in commercial operation, and they would not need to delay their commercial operation date if they can complete that plan by April 1, 2028. Entities seeking to use this option would be expected to demonstrate that they are eligible to use it, such as through dated contracts showing that it contractually committed to design criteria for the unit in question before that time. It was considered that entities would generally retain such contracts for their units under construction in the normal course of business and this would impose no additional burden.

For all other new generating units entering commercial operation on or after October 1, 2027, those units must either implement the more stringent capability required in Requirement R2 or declare a Generator Cold Weather Constraint. This includes units entering commercial operation after March 31, 2028 that are designed before June 29, 2023, as well as generating units entering commercial operation after October 1, 2027 that are designed after June 29, 2023. It is recognized that such generating units may need to delay their originally planned commercial operation date if they do not have the required capability and a

Generator Cold Weather Constraint would not apply. *See* June 2024 Order at P 72. Further, even if an entity has the option to implement a Corrective Action Plan, it is not required to do so. It may delay its commercial operation date until the required capability is installed, if a Generator Cold Weather Constraint would not apply.

Rationale for Requirement R3

The 2021-07 Drafting Team created a requirement for existing generating units, as defined in Requirement R3, to be able to operate at their ECWT. Many existing generating units have already demonstrated this capability. An early FERC order on EOP-012-1 rejected a one-hour timing requirement, consequently the 2021-07 DT chose to forego any specific time requirement in Requirement R3. If a generating unit cannot meet the requirements of Requirement R3, it is required to develop a CAP to add new freeze protection measures or modify existing freeze protection measures to be capable of operations at the ECWT (as calculated in Requirement 1).

Rationale for Requirement R4

General Considerations

Requirement R4 requires GOs to develop and maintain cold weather preparedness plans for their unit(s) and describes the information and documentation required in such plans. It is an expansion of the cold weather preparedness plan required under Requirement R7 of EOP-011-2 and is intended to be used and reviewed regularly by the GO. Originally, Requirement R4 Part 4.5 required the GO to annually inspect and perform necessary maintenance of freeze protection measures. The 2024-03 DT added some clarifying language to ensure that annual inspection and maintenance of freeze protection measures is applied specifically to Generator Cold Weather Critical Components. While other freeze protection measures may be applied to equipment by the GO, the freeze protection measures included in the cold weather preparedness plan with annual inspections and maintenance are expected to be those applied to Generator Cold Weather Critical Components. Working in concert with other parts of EOP-012-3, including but not limited to Requirements R1, R5, R6, and R7, the substantive elements of the cold weather preparedness plan will be subject to review requirements, updated as necessary, and the responsible party (GO or GOP) is required to annually train personnel on the cold weather preparedness plan requirements.

Requirement R4 Part 4.1

In Requirement R4 Part 4.1, the GO is required to include in the cold weather preparedness plan the lowest ECWT, as calculated pursuant to Requirement R1, for each unit using reliable source(s) of data. The 2021-07 DT believed that the GO is in the best position to select the most representative weather information relative to its generating unit. The cold weather preparedness plan will be updated if a new lower ECWT is calculated under the Requirement R1 periodic review language.

Requirement R4 Part 4.2

Requirement R4 Part 4.2 is intended to capture, within the cold weather preparedness plan, the information being developed pursuant to Requirement R1 Part 1.2, which is carried over from the previously approved EOP-011 Standard and requires the GO to document several cold weather performance parameters for the unit. This information is valuable, and in some cases, must be shared with other entities consistent with the data specification requirements contained in TOP-003 and IRO-010. A requirement for the GO to document this information within the cold weather preparedness plan ensures the information is readily available and documented when the GO responds to a data specification. It should be noted that if a Corrective Action Plan extension request is approved, the underlying generator cold weather data, as called out in Requirement R1 Part 1.2, should be correctly identified by the GO and provided to the RCs, BAs, and TOPs as requested. The June 2024 Order mentions this in Paragraph 3. The 2024-03 DT believes that the data specification Reliability Standards applicable to RCs, BAs, and TOPs (e.g., IRO-010 and TOP-003) require the entities to request the information and the GO is therefore obligated to provide the most current version of the relevant information within a Corrective Action Plan. The 2024-03 DT did not believe a notification Requirement was needed in EOP-012-3 in addition to those already existing in the data specification Reliability Standards. The 2024-03 DT encourages parties to work together to ensure the most accurate and up-to-date information is provided, especially when conditions increase risk to reliable operations. See the Technical Rationale for Requirement R1 for substantive rationale regarding the operating limitations and generating unit minimum temperatures documented in the cold weather preparedness plan.

Requirement R4 Part 4.3

In Requirement R4 Part 4.3, the GO identifies the Generator Cold Weather Critical Components to help inform their decision on where to implement appropriate freeze protection measures. The NERC *Reliability Guideline, Generating Unit Winter Weather Readiness – Current Industry Practices*[10], presents a suggested list of components that GOs may choose to utilize when developing their own Generator Cold Weather Critical Component inventory. The GO shall develop and maintain a list of Generator Cold Weather Critical Components for each unit.

Requirement R4 Part 4.4

Requirement R4 Part 4.4 requires GOs to document the freeze protection measures implemented on Generator Cold Weather Critical Components. These freeze protection measures should include those to reduce the cooling effects of wind. Requirement R4 does not require GOs to install new freeze protection measures to reduce the cooling effects of wind, but rather to identify freeze protection measures for Generator Cold Weather Critical Components that will protect against heat loss and the effect of freezing precipitation, where applicable, and document those measures (e.g., water-resistant insulation, protective shielding, insulated boxes, etc.). These measures could include temporary measures as well, such as wind breaks, but there is no expectation for entities to list all climate-controlled areas as freeze protection measures. Specifically, the freeze protection measures applied to Generator Cold Weather Critical Components must be captured in the cold weather preparedness plan.

Requirement R4 Part 4.5
Requirement R4 Part 4.5 is largely carried over from the previously approved EOP-011 Standard and requires annual inspection and maintenance of the freeze protection measures applied to Generator Cold Weather Critical Components identified in the cold weather preparedness plan. The 2024-03 DT added clarifying language to emphasize the need to effectively mitigate risk on the Generator Cold Weather Critical Components. This Requirement ensures these freeze protection measures will be ready and serviceable when needed.

Rationale for Requirement R5

The 2024-03 DT noted that there could be a combination of operations and maintenance personnel that require training, so minor adjustments were made to that extent. Additionally, the personnel may not be physically located at the generator site depending on how an entity implements their cold weather preparedness plan(s).

Rationale for Requirement R6

Key Recommendation 1d: To require Generator Owners that experience outages, failures to start, or derates due to freezing to review the generating unit's outage, failure to start, or derate and develop and implement a corrective action plan (CAP) for the identified equipment and evaluate whether the CAP applies to similar equipment for its other generating units. Based on the evaluation, the Generator Owner will either revise its cold weather preparedness plan to apply the CAP to the similar equipment or explain in a declaration (a) why no revisions to the cold weather preparedness plan are appropriate, and (b) that no further corrective actions will be taken. The standard drafting team should specify the specific timing for the CAP to be developed and implemented after the outage, derate, or failure to start, but the CAP should be developed as quickly as possible and be completed by no later than the beginning of the next winter season.

The Key Recommendation from the Joint Inquiry Report recommended a Reliability Standard that requires GOs to develop a Corrective Action Plan for generating units that experience outages, failures to starts, or derates due to freezing. The Joint Inquiry Report identifies that most of the outages and derates in the February 2021 event were due to freezing of instrumentation, transmitters, sensing lines, or wind turbine blades (p 166 in the Joint Inquiry Report). As such, the 2021-07 DT followed the Joint Inquiry Report recommendation to require a Corrective Action Plan when the apparent cause of the event is freezing. The 2021-07 DT developed parameters around these events to clarify a reasonable baseline of what level of derate qualified as an event and provide additional language to identify what constitutes a start-up failure. With the additional clarifications, the 2021-07 DT determined that the Reliability Standard would benefit from a defined term, to clearly and efficiently state what constitutes an event. The result was a defined term, Generator Cold Weather Reliability Event, that describes the circumstances for which a Corrective Action Plan is required (i.e., when a freezing event affects the equipment within the control of the GO). The defined term made the Reliability Standard easier to understand and implement by providing clear and reasonable factors to determine whether the impact of an event requires mitigation.

However, because of the June 2024 Order, the 2024-03 DT updated Requirement R6 to provide clearer timeline obligations for those units that suffer a Cold Weather Reliability Event. In general, the 2024-03 DT understands that if a Generator Cold Weather Reliability Event occurs, GOs will remediate the issue as soon as possible.

General Considerations for All Corrective Action Plans

To simplify the proposed requirements related to creating a Corrective Action Plan, the 2021-07 DT used the NERC Definition of a Corrective Action Plan. The Corrective Action Plan definition reads "A list of actions and an associated timetable for implementation to remedy a specific problem." As written, the definition requires two parts for a document to qualify as a Corrective Action Plan, i.e., a list of items to be addressed and a timeline for completion. A Corrective Action Plan without both a list of actions and the timeline to implement is not complete. The 2024-03 DT provided additional language for Corrective Action Plans to clarify expectations for those Corrective Action Plans created as a result of a Generator Cold Weather Reliability Event and other Corrective Action Plans referenced throughout the Requirement language. The resulting language kept the underlying structure developed during previous Projects but clarified and added information as needed to meet the June 2024 Order.

The Corrective Action Plan requirement applies to Generator Cold Weather Reliability Events as well as other instances of required actions to support reliable operations within the EOP-012-3 Standard Requirements. It should be noted that nothing in this standard prevents a GO from taking its own corrective actions resulting from events that do not meet the criteria of a Generator Cold Weather Reliability Event. Startup failure criteria were based on the GADS definition with the removal of "following an outage or reserve shutdown", since the definition of reserve shutdown is different in GADS than it is in some of the Regional Transmission Organizations (RTOs).

Requirement R6 requires the GO to develop, implement, and complete a Corrective Action Plan prior to the first day of December following a Generator Cold Weather Reliability Event. Note that the 2024-03 DT considered early occurrences (e.g., October or November) of Generator Cold Weather Reliability Events and provided a footnote to allow remedial activities to be completed by December 1 of the following calendar year. The December 1 date was chosen based on the FERC directives and the urgency stated within the June 2024 Order regarding this risk. This timeframe was maintained by the 2024-03 DT to allow GOs to review multiple events holistically following a winter season, if that scenario occurs, and create one Corrective Action Plan for components with common failure causes. Care should be taken when developing a multi-unit or multi-event Corrective Action Plan to ensure it meets the Corrective Action Plan criteria for each unit (e.g., actions and timetables may be different.)

The 2021-07 DT determined that Corrective Action Plans would be required for any freezing event that occurs at temperatures at or above the site's ECWT in accordance with the definition of a Generator Cold Weather Reliability Event. Using the site's ECWT as the threshold, as opposed to the generator unit minimum temperature as determined by the GO, achieves the following:

- Provides a consistent basis for the temperature at which Corrective Action Plans are required for all GOs

- Provides a consistent basis for when Corrective Action Plans are required for all generation types
- Provides a consistent basis for when Corrective Action Plans are required regardless of the level of effort that GOs may have applied to-date winterizing their generators such that they can operate to the ECWT that their sites will reasonably experience
- Removes any incentive (perceived or real) to not further winterize GOs sites to meet the ECWT at the GO site by not providing a window where one site might not be subject to the Corrective Action Plans requirement while sites in the same vicinity experiencing the same temperatures are subject to this requirement
- Removes any disincentive for GOs to design the units to operate well below the ECWT for a site by not requiring them to perform Corrective Action Plans while sites in the same vicinity experiencing the same temperatures are subject to this requirement

The 2024-03 DT provided clarifying language to have Corrective Action Plans developed in response to Generator Cold Weather Reliability Events developed and completed by the first day of December of the winter season following the Generator Cold Weather Reliability Event. Allowances for events which occur early winter season, which varies across the North American continent, were provided with the expectation that more transient fixes occurring after a Generator Cold Weather Reliability Event would be applied quickly but allowing a reasonable time horizon for compliance with this Requirement. A Corrective Action Plan triggered by a Generator Cold Weather Reliability Event and for which the apparent cause is the failure of relatively simple existing piece of freeze protection equipment, the scope of the Corrective Action Plan may be documented after the fact. Such prompt repairs may be completed before creation of the Corrective Action Plan, and the GO may complete the implementation of the Corrective Action Plan simply by evaluating the requirements of R6 and documenting how and when the repair work was completed. An example of this circumstance would be a freezing event caused by a single heat trace circuit failure which would have been sufficient to prevent the event had it not failed.

The June 2024 Order also directed changes affecting the application of a Generator Cold Weather Reliability Event Corrective Action Plans to other units within a GO's fleet. The 2024-03 DT added clarifying language to provide guidance on what the extent of condition (i.e., the review of other generating units) should encompass to help alleviate concerns raised by the industry during the comment and ballot period. Each GO should already know, per Requirement R4, the freeze protection measures on Generator Cold Weather Critical Components. The GOs also have the responsibility, per Requirement R4, to annually maintain and inspect the freeze protection measures on Generator Cold Weather Critical Components. Effectively those Requirements would support quick identification of same or similar equipment susceptible to freezing.

The 2024-03 DT, and later the Standards Committee in the exercise of its responsibility under Section 321 of the NERC Rules of Procedure, established a 12-calendar month window from the time of the originating Generator Cold Weather Reliability Event to complete its fleet-wide review for similar vulnerabilities and develop or update such a Corrective Action plan to address them. In response to multiple stakeholder comments, the Standards Committee provided a 24-calendar to 36-calendar month window (initiated

based on the date of the Generator Cold Weather Reliability Event) to implement corrective actions. GOs that complete their fleet-wide reviews sooner than the 12 months allowed would have a longer period of time overall to implement any required corrective actions, incentivizing prompt action to identify the extent of condition across a fleet. While the FERC directive suggesting a potentially longer staggered implementation was considered for more complex implementations, it was determined that developing specific requirements for staggering often presents many logistical challenges, and it may not promote an orderly and efficient implementation depending on the issue needing to be addressed. Allowing up to 36 months total to complete corrective actions would allow GOs with larger fleets to accommodate any required changes. Industry experience with Winter Storms URI and Elliott suggests that the timelines are sufficient in general to mitigate reliability risks. However, a Corrective Action Plan extension may be requested if a particularly complex implementation issue arises requiring longer time to implement.

Entities should evaluate the issue with the freeze protection measure that may have initiated the Generator Cold Weather Reliability Event to see if the maintenance and inspection efforts need to be adjusted (at the unit that suffered the Generator Cold Weather Reliability Event as well as at other similar units with similar freeze protection measures applied to Generator Cold Weather Critical Component(s)).

The existence of a Corrective Action Plan should not discourage the GO from applying any other actions necessary and feasible to prepare a unit to perform at extreme cold weather temperatures during the Corrective Action Plan implementation period.

The 2024-03 DT also created language that allows for Corrective Action Plan extension requests using the NERC Process. ERO Enterprise staff developed the NERC Process that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule). While TPL-007 has not been utilized extensively, the NERC Process is flexible enough to manage the expected submittals. The DT is not in control of updates to the NERC Process but the NERC staff have been engaged and responsive to industry concerns noted during the Standard development timeline. The NERC Process will allow a thorough review in a timely manner for any Corrective Action Plan extension requests including those that go beyond the 24 or 48 calendar month timetables. While there may be actions impacting the implementation and completion of Corrective Action Plans beyond the control of GOs (e.g., supply chain issues), the GOs should accelerate completion of corrective actions as much as possible to support reliable operations.

The 2024-03 DT updated language regarding Generator Cold Weather Constraints to clarify expectations. Please review Requirements R8 and R9 and Attachment 1 for further discussions of Generator Cold Weather Constraints.

In carrying out its responsibilities under Section 321 of the NERC Rules of Procedure, the Standards Committee determined to carry forward the general framework developed by the Project 2024-03 DT, with some modifications. First, to address stakeholder concerns about the lack of a clear deadline for implementing Corrective Action Plans, the Standards Committee added a deadline to develop Corrective Action Plans for units experiencing the Generator Cold Weather Reliability Event. This deadline would be the same as the date any required Corrective Action Plans for the units must be completed – by the first

day of the first December following the event (or for early season events, the first day of the first December of the following year). By adding this deadline, the Standards Committee intends to add clarity as to the latest date by which such Corrective Action Plans must be developed, while recognizing that the main reliability benefit will come from completing the corrective actions in an expeditious manner. As Corrective Action Plans contain important information to document causes and corrective actions that may inform future winter operations, there is still a reliability benefit to develop these Corrective Action Plans, even if any corrective actions in the Corrective Action Plan are completed in short order.

Rationale for Requirement R7

In EOP-012-2, R7 was expanded from EOP-012-1 to provide additional definition on the requirements to implement a Corrective Action Plan, and to meet the direction for this requirement set by the February 2023 FERC Order. One such direction was to define expectations on implementation timelines for Corrective Action Plans. Under EOP-012-2 R7, Corrective Action Plans were divided into two categories: 1) those which address existing freeze protection measure(s), and 2) those which require new equipment or freeze protection measure(s). The former category required completion of the Corrective Action Plan to remedy the cause(s) within 24 months, and the latter required completion of the Corrective Action Plan within 48 months. The 2021-07 DT modeled this timeline structure after similar Corrective Action Plan implementation requirements in TPL-007. These are maximum durations and entities are expected to work diligently to correct issues and take prompt actions to mitigate future issues as soon as practical. At the same time, the 2021-07 DT recognized that the following time-consuming activities make the 24 and 48 calendar months maximum timelines reasonable: scoping applicability to similar units, freeze protection engineering and design, project development, budgeting processes, material supply lead times, outage scheduling, skilled labor availability, and startup/commissioning. However, the June 2024 Order established directives to clarify timelines and responsibilities associated with Corrective Action Plans. The 2024-03 DT chose to specifically remove Corrective Action Plan obligations for Generator Cold Weather Reliability Events and place those in Requirement R6. For Requirement 7, the 2024-03 DT provided clarifying language regarding existing and new freeze protection measures and the associated completion timelines. Language was provided for Corrective Action Plans that may include changes to existing freeze protection measures and addition of new freeze protection measures to help clarify expectations for completing the corrective actions. The Project 2024-03 DT discussed the adjectives “new” and “existing” freeze protection measures as it is used within the Requirements. If there is the failure of a freeze protection measure (e.g., heat trace) and that freeze protection measure is replaced with the same/similar/commonly used technology that is considered “existing”. The change of a heat trace from 40 foot to 60 foot or change in the amperage capability of the heat trace is not a “new” freeze protection measure. A change in lightbulb wattage in an enclosure should not be considered “new”. The industry did provide some examples of “new” freeze protection measures (i.e., new permanent structures or new technologies not already applied) that may take longer to implement depending upon the nature of the freeze protection measure. A wind block made of tarps and a wooden or steel frame should not be considered “new” and require 48 months to implement even if the site did not have a wind block already. Care should be exercised by GOs in the use of “new” and “existing” freeze protection measures and the

resulting Corrective Action Plan timelines. Industry experience with Winter Storms URI and Elliott suggests that the shorter timelines are sufficient in general to mitigate reliability risks. Entities are expected to work diligently to correct issues and take prompt actions to mitigate future recurrence. The 2024-03 DT updated Parts 7.1.3. and 7.1.4 for completeness to ensure updates would be made to document needed changes to the cold weather preparedness plan(s) to eliminate recurrence of issue(s) identified in the Corrective Action Plan. In clarifying these timeframes, the 2024-03 DT considered the FERC directives.

Within the revised Requirement R7, the GO is required to implement the Corrective Action Plan within a timetable defined by the GO in the Corrective Action Plan but limited by maximum durations in Part 7.1. If the GO is unable to complete the Corrective Action Plan within the time limits in Part 7.1, or the corrective action(s) change, the GO is required to update the Corrective Action Plan with justification. GOs that are unable to complete the Corrective Action Plan due to a Generator Cold Weather Constraint are required under Part 7.3 to create a declaration of the Generator Cold Weather Constraint which shall be provided to the Compliance Enforcement Authority per Requirement R8. Further requirements for the Generator Cold Weather Constraints are provided under Requirements R8 and R9.

The 2024-03 DT also created language that allows for Corrective Action Plan extension requests using the NERC Process. ERO Enterprise staff developed the NERC Process that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule). The NERC Process will allow a thorough review in a timely manner for any Corrective Action Plan extension requests including those that go beyond the 24 or 48 calendar months. The 2024-03 DT utilized the precedent set by TPL-007 to ensure the unique circumstances of each request will be considered while also avoiding potential compliance burdens which may not have a corresponding reliability benefit (e.g. specific timelines for submission and approval of extension requests). While there may be actions impacting the implementation and completion of Corrective Action Plans beyond the control of GOs (e.g., supply chain issues), the GOs should accelerate completion of corrective actions as much as possible to support reliable operations. It is expected that extension requests will be limited in nature. GOs will have to provide clear justifications with supporting materials within the extension request. Due diligence in ordering equipment, obtaining permits, etc., will be considered as part of the determination of whether a particular set of facts constitute circumstances beyond the control of the entity. Denials of extension requests will be minimized if GOs work diligently to correct issues and take prompt actions. Denial of an extension means the initial timelines for corrective actions must be met.

The 2024-03 DT updated language regarding Generator Cold Weather Constraints to clarify expectations. Please review Requirements R8 and R9 for further discussions of Generator Cold Weather Constraints.

If one or more actions within a Corrective Action Plan fall under a Generator Cold Weather Constraint declaration, it is the intent of the DT that only those constraint affected actions would not be implemented as part of the Corrective Action Plan. The remaining corrective actions should be implemented per the timelines provided unless dependent upon the corrective action triggering the Generator Cold Weather Constraint declaration.

Rationale for Requirement R8

In the February 2023 FERC Order, the Commission expressed concern that a GO may make a Generator Cold Weather Constraint declaration without informing planning and operational entities (e.g., the BA) that are expecting the reliable operation of the generating unit to its ECWT. An additional concern was that the Generator Cold Weather Constraint declarations may be used by a functional entity as an opt-out of compliance with requirements set forth in the standards or in a corrective action plan. To mitigate the concern, the Commission directed NERC to work with Commission staff and submit a data collection and assessment plan that contains information related to GO constraint declarations and explanations thereof. The 2021-07 DT expected that ERO Enterprise compliance staff will be responsible for reviewing declared Generator Cold Weather Constraints and assessing compliance with the Generator Cold Weather Constraint definition criteria in accordance with established processes. The June 2024 Order directives included more direct language that required NERC to receive, review, evaluate, and confirm the validity of each Generator Cold Weather Constraint in a timely manner. Additionally, the June 2024 Order directives required an increase in the frequency of reviews of Generator Cold Weather Constraints. If a Corrective Action Plan extension request is denied by the CEA, then the GO may request a joint CEA/NERC review of the denial.

The 2024-03 DT updated Requirement R8 to require the GO to submit, to the Compliance Enforcement Authority, a Generator Cold Weather Constraint in accordance with Attachment 1 under specific timelines. The ERO Enterprise staff have developed the Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule) as a foundation for the Generator Cold Weather Constraint process. The NERC Process will allow a thorough review in a timely manner for any Generator Cold Weather Constraint submitted. The 2024-03 DT created Attachment 1 to provide clear expectations on Generator Cold Weather Constraint conditions. Attachment 1 contains some known Generator Cold Weather Constraint conditions as well as examples of other case-by-case Generator Cold Weather Constraint conditions that may also be considered valid. To be clear, all Generator Cold Weather Constraint declarations require submittal per the NERC Process. The 2024-03 DT could not create an exhaustive list of Generator Cold Weather Constraint conditions but provided language that allows professional judgement to be utilized. The 2024-03 DT believes the NERC Process in conjunction with Requirement R8 and Attachment 1 effectively meets the FERC directive regarding receiving, reviewing, evaluating, and confirming the validity of Generator Cold Weather Constraints.

To address concerns about potential administrative burdens associated with repeated, known issues at generating unit(s) with a valid Generator Cold Weather Constraint, the Project 2024-03 DT developed Part 8.4. Part 8.4 provides that, in such a case, the GO will provide notice to the CEA. This helps maintain visibility over known reliability issues while reducing the administrative burdens associated with repeating requirements in this case.

The 2021-07 DT believed that Generator Cold Weather Constraint declarations would be the exception, but it is clear to the 2024-03 DT that certain conditions may exist (based on general weather patterns)

that will increase the amount of Generator Cold Weather Constraint declarations and subsequent submittals. In anticipation of that scenario, and following the June 2024 Order, the 2024-03 DT considers the NERC Process a valuable tool to capture data that may help future understanding of the effectiveness of the ECWT. The February 2023 FERC Order and subsequent NERC filing require the collection of data to evaluate the effectiveness of the EOP-012-3 Reliability Standard.

Updated Generator Cold Weather Constraint declarations would also require an update to the operating limitations provided via data specifications to the entities overseeing reliability (e.g., BA, TOP, or RC). In this manner, information relevant to valid Generator Cold Weather Constraint declarations are made available to the planning and operational entities pursuant to their data collection authority contained in TOP-003 and IRO-010. BAs, RCs, and TOPs should ensure complete coverage and timeliness of cold weather related data submission within their data specifications especially during local forecasted cold weather.

Rationale for Requirement R9

Based on multiple comments regarding Requirement R8, the FERC directive regarding periodicity of reviews, and what a GO should do if a Generator Cold Weather Constraint is determined to be no longer valid, the 2024-03 DT developed a separate new Requirement R9.

Initially EOP-012-1 required an annual review of Generator Cold Weather Constraints. That frequency of reviews was subsequently changed to five years in EOP-012-2. The June 2024 Order directed that the review frequency be increased from the five-year periodicity. While GOs should perform a review and update any Generator Cold Weather Constraint declarations as needed, the 2024-03 DT has developed language requiring a review of validated Generator Cold Weather Constraints every 36 calendar months.

Initially, the Project 2024-03 proposed that reviews be conducted every 24 calendar months. There were multiple concerns raised about the 24 calendar month periodicity. Based on consideration of these concerns, the 2024-03 DT chose, and the Standards Committee , in carrying out its responsibilities under Section 321 of the NERC Rules of Procedure, determined to carry forward the decision, to extend it to 36 calendar months. Reliability Standard CIP-014, a Reliability Standard addressing another significant risk, is proposing a review every 36 calendar months. Based on information shared at the Technical Conference held on November 12, 2024, changes to some technologies that may affect Generator Cold Weather Constraints may take a significant amount of time (well in excess of 36 months) to become available. By shortening from the five calendar years, the 36 calendar month timeline provides a reasonable approach to meeting the Commission’s directives without creating undue administrative burden to periodically monitor if Generator Cold Weather Constraints remain valid or if new technologies have become available that effectively obviate the originally validated Generator Cold Weather Constraint.

Part 9.1 addresses what a GO must do if it finds that a declared Generator Cold Weather Constraint is no longer valid. For example, a new technology exists that would address the freezing issue, and no other Generator Cold Weather Constraint criteria would apply. In that case, the GO must develop a Corrective Action Plan or update an existing Corrective Action Plan (if applicable), in accordance with the requirements for Corrective Action Plans in Requirement R7. This would include timetables specifying completion of the corrective actions in accordance with that requirement.

Attachment 1

The 2024-03 DT chose to utilize a limited and discrete list of known Generator Cold Weather Constraints as well as a description of other case-by-case situational descriptions that may constitute Generator Cold Weather Constraints. All declared Generator Cold Weather Constraints must be confirmed as valid by the Compliance Enforcement Authority. Nevertheless, the limited and discrete list is intended to describe specific circumstances that, if met, would have a very high probability of being approved. The 2024-03 DT discussed providing clarity with examples (as noted by FERC Order Paragraph 47) knowing that additional instances or conditions that may be considered a Generator Cold Weather Constraint may exist.

Per the FERC Order, NERC staff are responsible to provide a process describing the receipt, evaluation, approval (as needed), and validation of Generator Cold Weather Constraints. This process is captured in the Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") document.

Once a declaration is approved by the CEA it is considered valid.

The 2024-03 DT is intentionally leaving room for additional instances of Generator Cold Weather Constraints to be presented as it would be impossible to foresee every potential set of circumstances that could possibly constitute a constraint. Furthermore, the 2024-03 DT wants to ensure that the Standard language supports the development and adoption of new freeze protection measures, practices, methods, or technologies while not immediately requiring that the new freeze protection measures, practices, methods, or technologies be implemented industry-wide. The 2024-03 DT encourages additional study and implementation of freeze protection measures to remove Generator Cold Weather Constraints, as appropriate, over time.

The 2024-03 DT updated the definition of Generator Cold Weather Constraints to provide clarity as directed by FERC. In addition to modifying the definition, the 2024-03 DT developed Attachment 1. Requirement R8 provides entities a clear understanding of what is expected when managing Generator Cold Weather Constraints and directly references use of Attachment 1. The DT broadly categorized Generator Cold Weather Constraints into two types; known and those that would be determined on a case-by-case basis.

The first of the known Generator Cold Weather Constraints, addressing low temperature operability of wind turbine towers, was debated at length in the 2024-03 DT meetings. Discussion among the Drafting Team, observers, and in the Technical Conference indicated a typical limit of -22°F for operation of wind turbines. This typical limit may apply specifically to heated areas or equipment within the nacelle and not be associated with other known ductile-to-brittle transition temperatures for specific mild steel alloys used in turbine towers. Nevertheless, unless a tower is constructed of Austenitic stainless steel or other face-centered cubic atomic structure materials, such a transition temperature generally will exist. The dynamic stresses of operating the wind turbine below such transition temperatures could imperil the structure itself. Anecdotally, it was noted that this limit would cause this Constraint to apply to a portion of the north-central United States and central Canada. It was broadly recognized that the standard needs

to recognize and allow this limitation for existing wind turbine tower equipment, and the DT sought to determine an appropriate date beyond which it should be expected that industry can meet low temperature operating capability. Ultimately, October 1, 2029 was established as the manufacturing limit date for compliance of new wind turbine towers. This was determined based on an accelerated interpretation of general feedback from the 2024-03 Technical Conference indicating that generational technological development cycles in the industry are on the order of 5-7 years. The October 1, 2029 date would allow four years beyond the anticipated implementation date of EOP-012-3 (October 1, 2025) for manufacturers to select, apply, test, and begin production of wind turbine towers constructed of materials capable of lower temperature operation appropriate for those locations with Extreme Cold Weather Temperatures below the limits associated with current tower material designs[10]. In addition, the 2024-03 DT also received feedback through industry outreach from participants indicating delivery and construction lead times for wind turbines were years into the future, providing additional support for the selected dates. The language in the Standard also requires those units to enter commercial operation before October 1, 2031, which prevents an entity from simply procuring an abundance of equipment prior to the manufacturing date limit (October 1, 2029) and constructing them over a long period of time in the future. The two-year gap was established to give a reasonable timeframe for entities to receive, construct, and commission the equipment. The DT felt that these dates would appropriately allow projects that are currently in different phases of planning or execution to be completed while also creating end dates beyond which wind turbine towers must be designed and erected to meet all aspects of EOP-012-3 and this particular known Generator Cold Weather Constraint would no longer be considered valid.

Regardless of a Generator Cold Weather Constraint being of the “known” type, a GO is still required to submit known Generator Cold Weather Constraints for approval.

The case-by-case situations and circumstances that may constitute a Generator Cold Weather Constraint are described separately. The enumerated list in Attachment 1 is not intended to be exhaustive but rather to provide clear descriptions of circumstances that may constitute Generator Cold Weather Constraints depending on the facts and circumstances presented by the GO. Generator Operators bear the burden of defending and supporting their declared constraints while the ERO bears the burden of confirming them as valid, or not.

Among these circumstances, the DT recognized the need to balance potential adverse effects to the Bulk Power System reliability caused by requiring implementing of a freeze protection measure with the beneficial effects of doing the same. Because such circumstances can and do change by location and over time, this weighing process is best done on a localized basis and ideally interactively between the GO and other affected functional entities while broadly considering immediate and potential future impacts of a declared constraint.

[10] The DT also consulted with a representative from a wind OEM with experience in operations in Northern Europe, United States, and Canada, all areas that can experience extremely low temperatures. This representative indicated that there were no wind turbine tower designs in their current and projected future global portfolio that operate at temperatures colder than -30 degrees Celsius (-22 degrees Fahrenheit). The OEM follows IEC 61400-1 Ed 2019 (Chapter 14 Cold Climate)(https://webstore.iec.ch/en/publication/26423) and when operations as low as -30 degrees Celsius is desired, low temperature environmental modification kits are added.

Two particular cases seemed particularly well-suited for a threshold for quantification of impacts: those that reduce a generating unit's real or reactive power when the freeze protection measure is not in place and those that would reduce net dependable capacity during summer or at Peak Demand. These two cases are addressed in sections 5.c. and 5.d. of Attachment 1. In them, the DT has selected a value of three (3) percent, reduction as an appropriate level of impact above which the deleterious impact to the Bulk Power System resulting from requiring a specific freeze protection measure may be appropriately determined to outweigh the benefits of applying the measure. Recognizing that local and temporal conditions are best understood, measured and predicted by the GO and affected functional entities, the DT chose to allow flexibility in the selected three percent value when a different value is supported by the appropriate functional entity as more supportive of reliable operation of the grid.

In addition to being a sensible threshold, use of a three (3) percent value has precedent in BAL-002-WECC-3 where it is used as a barometer for reliable operations in terms of Contingency Reserve.

The language provided in both the known and case-by-case portions of Attachment 1 is meant to describe criteria that are objective, unambiguous, and auditable.

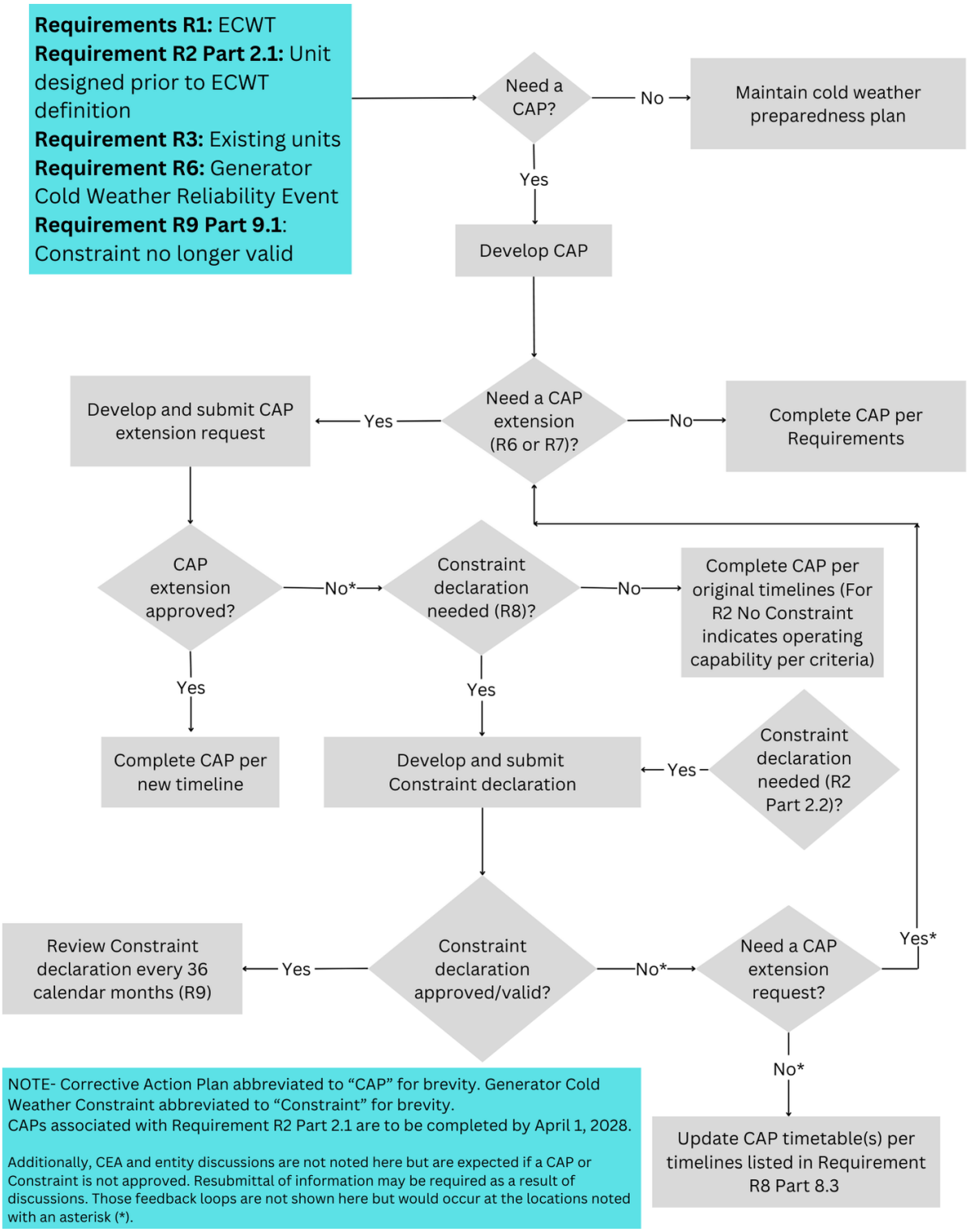
In all cases, when submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the GO must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the GO will apply. If a Generator Cold Weather Constraint declaration indicates that the application of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk-Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s), the documentation that defends and supports the constraint could properly include any assessment that the applicable functional entity (e.g., BA or RC) might agree to provide concerning the impact to the reliability of the Bulk-Power System if the constraint were to be deemed invalid by the CEA. Such an assessment, or other means of demonstrating agreement from an appropriate functional entity, would serve to strengthen the Generator Cold Weather Constraint declaration.

It should also be emphasized, as written in Attachment 1, that an approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the GO of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

With all Generator Cold Weather Constraints, it is the responsibility of the GO to provide supporting materials to facilitate approval and validation of the Generator Cold Weather Constraint by the ERO Enterprise. As mentioned in the Requirement R8 Technical Rational discussion, the NERC Process was developed to support the FERC directives in the June 2024 Order. The 2024-03 DT believes the new definition of Generator Cold Weather Constraint, updated language throughout the Standard with

emphasis on Requirement R8, and the contents of Attachment 1 provide significant clarity to industry on what is expected for Generator Cold Weather Constraints to be considered valid.

EOP-012-3 Process Flow Chart: Below is a graphical representation demonstrating the relationship between Requirements:



NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Technical Rationale

Project 2024-03 Revisions to EOP-012-2
Reliability Standard EOP-012-3 | ~~December 2024~~January 2025

EOP-012-3 – Extreme Cold Weather Preparedness and Operations

Introduction

This document explains the technical rationale and justification for the proposed Reliability Standard EOP-012-3. It provides stakeholders and the ERO Enterprise with an understanding of the technology and technical requirements in the Reliability Standard. This Technical Rationale and Justification for EOP-012-3 is not a Reliability Standard and should not be considered mandatory and enforceable.

Background

From February 8 through February 20, 2021, extreme cold weather and precipitation caused large numbers of generating units to experience outages, derates or failures to start, resulting in energy and transmission emergencies (referred to as the "Event"). The total Event firm load shed was the largest controlled firm load shed event in U.S. history and was the third largest in quantity of outaged megawatts (MW) of load after the August 2003 Northeast blackout and the August 1996 West Coast blackout. The Event was most severe from February 15 through February 18, 2021, and it contributed to power outages affecting millions of electricity customers throughout the regions of ERCOT, SPP, and MISO South. Additionally, the February 2021 event is the fourth cold weather event in the past 10 years, which jeopardized Bulk Power System (BPS) reliability. A joint inquiry was conducted to discover reliability-related findings and develop recommendations from Federal Energy Regulatory Commission (FERC), NERC, and Regional Entity staff. The FERC, NERC, and Regional Entity Staff Report ~~into~~about the February 2021 Cold Weather Outages[1] ("Joint Inquiry Report") was published on November 16, 2021.

Project 2021-07 was a two-phase project to address the 10 sub-recommendations in Key Recommendation 1 of the Joint Inquiry Report for new or enhanced NERC Reliability Standards. Reliability Standard EOP-012-1 was originally developed to address Recommendations 1d, 1e, and 1f of the Joint Inquiry Report through new and enhanced requirements for generator preparedness for extreme cold weather conditions. Reliability Standard EOP-012-2 was revised to address Key Recommendations 1a, 1b, and 1c as well as the FERC directives in the February 2023 Order approving the Phase 1 standards EOP-011-3 and EOP-012-1.[2] Reliability Standard EOP-012-3 is being revised to address FERC directives in the June 2024 Order approving EOP-011-4 and EOP-012-2[3].

1 The February 2021 Cold Weather Outages in Texas and the South Central United States | FERC, NERC and Regional Entity Staff Report | Federal
Energy Regulatory Commission
2 *N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094 (2023) (FERC Order), *notice denying reh'g and providing for further consideration*, 183 FERC ¶ 62,034 (2023).
3 *N.AM.Elec.Reliability Corp.*, 187 FERC ¶ 61,204 (FERC Order)

Defined Terms

Previous drafting teams (DTs) developed five defined terms to be added to the NERC Glossary of Terms to make the requirements easier to understand. Project 2024-03 updated ~~one~~the term ~~(~~"Generator Cold Weather Constraint~~)~~" to meet the FERC directives in the June 2024 Order and provided additional language to clarify issues noted during the development of EOP-012-3, 2024 Small Group Advisory Session(s), and input received during outreach with industry. ~~These~~The five terms are:

Extreme Cold Weather Temperature

The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 1/1/2000 through the date the temperature is calculated.

The definition of Extreme Cold Weather Temperature (ECWT) was developed by the 2021-07 ~~Drafting Team (~~DT~~)~~ to provide clarity to the Generator Owner (GO) on determining what temperature triggers the requirement obligations. Each GO should select a reliable source of data from a recording location near the plant to determine their ECWT. Sources could include, for example, the National Weather Service (NWS) or National Oceanographic and Atmospheric Administration (NOAA) weather stations, Federal Aviation Administration (FAA) weather stations, or Environment and Climate Change Canada location for Canadian entities[4], etc. NOAA's National Centers for Environmental Information provides Climate Data Online (CDO) as a free resource that includes quality-controlled weather data and 30-year Climate Normals[5]. In general, GOs should use the location nearest the plant, but may select a further location if geographic or local climatic patterns make a further location more representative of the weather at the generating unit. GOs may use on-site weather stations if data, which reasonably matches reliable nearby off-site sources since January 1, 2000, is available. The starting period chosen by the 2021-07 DT to gather data to determine the lowest temperatures that occur near a facility is based on the completion of the modernization of the National Weather Service project known as MAR (Modernization and Associated Restructuring). This project was completed in the year 2000. In general, the National Weather Service modernization provides weather data to be available at most large airports. This will make it fairly accessible for companies to gather data and perform the required analysis. The December through February timeframe was selected to correspond to the meteorological winter, as defined by NOAA.[6]

The 2021-07 DT discussed methods for determining an ECWT with engineering design professionals, and it was determined that it is typical engineering practice to use a statistical approach to determine the design temperature when implementing generation facility freeze protection measures. The 2021-07 DT determined that only winter temperature values (i.e. between December and February) shall be used for the statistical approach and based on analysis of multiple weather data sites~~, it~~. It was determined that by using the lowest 0.2 percentile, there will be sufficient data points to ensure that a single hour at a temperature that may not be accurate, or may be a statistical anomaly, doesn't result in an overly conservative design or preclude the ability of the GO to use historical operating data to prove compliance to the requirements. The 2021-07 DT selected the 0.2 percentile of winter month temperatures since 1/1/2000 to identify a temperature which has been rarely surpassed, but which allows some margin for a

4 Environment and Climate Change Canada - Canada.ca
5 U.S. Climate Normals | National Centers for Environmental Information (NCEI) (noaa.gov)
6 Meteorological Versus Astronomical Seasons | News | National Centers for Environmental Information (NCEI) (noaa.gov)

GO to have previously demonstrated successful operation. The 2021-07 DT considered using the lowest recorded hourly ambient temperature, but upon further review of the historical weather data and generally accepted design principles, determined that the statistical approach to setting the ECWT for a site's location was more reasonable.

The 2024-03 DT recognized comments and concerns raised during the 2024 Small Group Advisory Session on cold weather preparedness regarding application of the ECWT calculation if hourly temperature values were questionable. If complete data sets are not available (e.g., data is corrupt or missing) at a single weather station back to January 1, 2000, the GO should document the methodology they use to determine their ECWT, such as appending data from multiple weather stations or selecting a complete or partial data set from a weather station further away from the facility. The 2021-07 and 2024-03 DTs realized that a complete data set (i.e., all hours of every day of every year for the months of December, January, and February) may not be available due to a variety of technical reasons. To that point, the ~~Generator Owner's~~GO's approach in handling the missing/corrupt data should be documented in their methodology and available to Compliance Monitoring Enforcement Program (CMEP) staff as needed. To accommodate concerns raised by industry, the 2024-03 DT felt additional clarification was needed to address missing data and set an expectation for entities to meet when reviewing the inputs to the ECWT calculations within Requirement R1. Entities should be able to explain the reasoning behind the substitution of missing or corrupt data points.

It has been noted by the industry that there ~~will likely~~may be the possibility of missing temperature data utilized for the ECWT calculation. The 2024-03 DT discussed data completeness concerns and, after considering the likely variability in such hourly temperature data sets across North America, ultimately chose not to establish a requirement regarding the size of the data set necessary to support an accurate ECWT determination. The 2024-03 DT understands ~~that~~ the entity may very well have an overall approach to missing data versus a generating unit-by-unit approach. By the nature of the percentile function, significant data loss may not change the ECWT value. The key is where the data is missing in relationship to the ECWT determined value. Note that compliance obligations when the ECWT is determined near 32 degrees Fahrenheit, tend to dictate the need for a more rigorous level of effort needed to help determine possible impacts of missing temperature data. Missing hourly temperature values above the ECWT has limited impact to the determination. However, missing hourly temperature values below the ECWT can impact the ECWT determination value. For example, the 0.2 percentile of 50,000 hourly values equates to 100 hourly values (in this case the lowest recorded hourly temperatures.) If there are missing hourly values that would have been included in the list of the lowest 100 hourly temperature values, those values should be explained by the entity and may warrant further review. Missing data in the lowest 100 values effectively has the potential of moving the ECWT value higher but that is ~~very~~ dependent upon the data set. This simplified example is intended to demonstrate a principle; not establish a fixed number of lowest temperature values of concern. Any data set with missing or invalid hourly temperature values recorded during the coldest periods since January 1, 2000 should be carefully evaluated to ~~assure~~ensure that any adjustments utilized on those particular values are properly addressed in a transparent and logical way. Please reference the Calculating Extreme Cold Weather Temperature document drafted by the 2021-07 DT and updated by the 2024-03 DT for an example of how to calculate the ECWT[7].

7 Report (nerc.com)

Generator Cold Weather Critical Component

Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

The 2021-07 DT felt the best method to address where freeze protection measures should be implemented was to define a term which specifies a subset of components that may be susceptible to freezing and are critical to the operation of generating units. GOs should consider previous freeze-related issues experienced by the generating unit(s), as well as actions taken to mitigate those freeze-related issues, when establishing its list of Cold Weather Critical Components. The 2021-07 DT also felt it is appropriate to specifically exclude components that are not susceptible to freezing due to being inside heated buildings that maintain the interior temperature above freezing.

The 2021-07 DT's intent with regard to the language "that is under the Generator's Owner's control" was to clearly delineate that cold weather events external to the generation site such as loss of fuel supply or loss of auxiliary power to the site that resulted in a Generator Cold Weather Reliability Event (see definition below) would not be subject to this standard. Furthermore, ice buildup on transmission lines and/or high voltage lines between the generating station and point of interconnection with the Transmission Owner would not constitute a freezing condition in the context of this Standard, and therefore, these lines would not be considered a Generator Cold Weather Critical Component.

The 2021-07 DT's intent with the use of the phrase "permanent building" is to refer to a structure that is in place year-round, shall accommodate personnel entry, and has a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit for the purpose of protecting components from freezing (e.g. heated container that protects inverter-based resources or battery energy systems). The 2024-03 DT recognized comments and concerns raised during the 2024 Small Group Advisory Session on cold weather preparedness regarding heating of the "permanent building." The HVAC/heating system is not a freeze protection measure in terms of being included in the cold weather preparedness plan as it is not protecting a Generator Cold Weather Critical Component (per the definition) nor is it a Generator Cold Weather Critical Component. The 2024-03 DT expects the HVAC/heating system to be part of routine maintenance and monitoring to ensure that the heated building remains above 32 degrees Fahrenheit.

Fixed Fuel Supply Component

Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

The 2021-07 DT wanted to clarify the boundaries of responsibility for the GO as it relates to sites having fuel handling equipment within their control and responsibility to provide freeze protection. The intent of

this definition is to clarify that mobile equipment is not part of this requirement, but permanent fixed equipment impacting fuel delivery needed for generation is included.

Generator Cold Weather Reliability Event

One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

Key Recommendation 1d: To require Generator Owners that experience outages, failures to start, or derates due to freezing to review the generating unit's outage, failure to start, or derate and develop and implement a corrective action plan (CAP) for the identified equipment, and evaluate whether the CAP applies to similar equipment for its other generating units. Based on the evaluation, the Generator Owner will either revise its cold weather preparedness plan to apply the CAP to the similar equipment, or explain in a declaration (a) why no revisions to the cold weather preparedness plan are appropriate, and (b) that no further corrective actions will be taken. The standard drafting team should specify the specific timing for the CAP to be developed and implemented after the outage, derate, or failure to start, but the CAP should be developed as quickly as possible, and be completed by no later than the beginning of the next winter season.

The Key Recommendation from the Joint Inquiry Report recommends a Reliability Standard that requires GOs to develop a Corrective Action Plan for generating units that experience outages, failures to starts, or derates due to freezing. The Joint Inquiry Report identifies that most of the outages and derates in the February 2021 event were due to freezing of instrumentation, transmitters, sensing lines, or wind turbine blades (p 166 in the Joint Inquiry Report). As such, the 2021-07 DT followed the Joint Inquiry Report recommendation to require a Corrective Action Plan when the apparent cause of the event is freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, or freezing rain) on equipment. The 2021-07 DT felt that it was important to clearly call out freezing precipitation as these events were included in the outages and derates that identified as freezing in the Joint Inquiry Report. Furthermore, Key Recommendation 1c of the report requires GOs to account for the effect of precipitation. The 2021-07 DT has developed parameters around these events to clarify a reasonable baseline of what level of derate qualifies as an event, and provide additional language to identify what constitutes a start-up failure. With the additional clarifications, the 2021-07 DT determined that the standard would benefit from a defined term, to clearly and efficiently state what constitutes an event. The result is a new defined term, Generator Cold Weather Reliability Event, that defines the circumstances for which a Corrective Action Plan is required (i.e., when a freezing event affects the equipment within the control of the GO). The defined term will make the standard easier to understand and implement by providing clear and reasonable factors to determine whether the impact of an event requires mitigation. The 2021-07 DT is

using the definition of apparent as defined in the Webster's dictionary as "clear or manifest to the understanding".

Note that the 2024-03 DT provided additional language to alleviate concerns regarding the administrative nature of developing Corrective Action Plans specifically for similar noted issues occurring at one or more locations (e.g., freezing precipitation on wind turbines). Care should be taken if updating existing Corrective Action Plans for additional units especially in terms of effectively capturing the actions and timetables applicable to the additional units.

The Corrective Action Plan requirement applies to any forced outage due to freezing, regardless of duration. Derates, which are short lived (specified as four hours by the 2021-07 DT) or of small capacity impact (specified as less than 20 MW by the 2021-07 DT, which roughly corresponds with the threshold for Bulk Electric System (BES) impacting generation units), are excluded from the Corrective Action Plan requirement to limit the administrative burden to GOs for events that are minimally impacting to the BES. Also excluded are proactive operational actions to limit the potential of forced outages or derates. It should be noted that nothing in this standard prevents a GO from taking its own corrective actions resulting from such events. Startup failures for conventional generation are defined using the Generating Availability Data System (GADS) definition with the removal of "following an outage or reserve shutdown", since reserve shutdown is defined differently by NERC in GADS than it is by some of the Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs). From the GADS data reporting instructions, the startup period for each unit is determined by the operating company. It is unique for each unit and may depend on the condition of the unit at the time of startup (cold, warm, or hot). A typical unit startup occurs in three phases: warm up, synchronization, and ramp up. NERC defines a startup period to begin with the command to start and end when the unit is synchronized. A startup failure begins when a problem, preventing the unit from synchronizing, occurs. The startup failure ends when the unit is synchronized, another startup failure occurs, or the unit enters another permissible state.

The 2021-07 DT determined that Corrective Action Plans will be required for any freezing event that occurs at temperatures above the generator site's ECWT. By using the site's ECWT, as opposed to the generator unit minimum temperature as defined by the GO in Requirement R1 Part 1.2.2 as the threshold, this achieves the following:

- Provides a consistent basis for the temperature at which CAPS are required for all GOs
- Provides a consistent basis for when Corrective Action Plans are required for all generation types
- Provides a consistent basis for when Corrective Action Plans are required regardless of the level of effort that GOs may have applied to-date winterizing their generators such that they can operate to the ECWT that their sites will reasonably experience
- Removes any incentive (perceived or real) to not further winterize GOs generating sites to meet the ECWT at the GO site by not providing a window where one site might not be subject to the Corrective Action Plan requirement while sites in the same vicinity experiencing the same temperatures are subject to this requirement

- Removes any disincentive for GOs to design the units to operate well below the ECWT for a site by not requiring them to perform Corrective Action Plans while sites in the same vicinity experiencing the same temperatures are subject to this requirement

Generator Cold Weather Constraint

Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies.

The 2024-03 DT reviewed the material from the June 2024 Order when determining how best to update the Generator Cold Weather Constraint definition. The 2024-03 DT relied upon industry and FERC guidance as a basis for updating the definition language and the process captured in Attachment 1 of EOP-012-3. The 2024-03 DT also ensured that constraint language would be fully captured within the Standard itself through Attachment 1.

The 2024-03 DT felt that an Attachment that included specific language further explaining Generator Cold Weather Constraints with discrete known Generator Cold Weather Constraints and other case-by-case Generator Cold Weather Constraints meets the FERC (and industry) expectations to provide unambiguous, objective, and auditable language. The 2024-03 DT discussed providing clarity with examples knowing that additional instances or conditions that may be considered a Generator Cold Weather Constraint may exist.

Per the FERC Order, NERC staff ~~is~~are responsible to provide a process describing the receipt, evaluation, approval (as needed), and validation of Generator Cold Weather Constraints. This process is captured in the Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") document.

Attachment 1 contains a non-comprehensive list of known Generator Cold Weather Constraints as well as a list of situations, circumstances, and criteria that may constitute a Generator Cold Weather Constraint. The ~~Generator Owner~~GO **must** submit all Generator Cold Weather Constraints to the Compliance Enforcement Authority (CEA) for approval, regardless of which category it might fall into.

Once a declaration is approved by the CEA, it is considered valid. It is the GO's responsibility to document, in the Generator Cold Weather Constraint declaration, the circumstances and reasons why the modification needed to address the freeze protection measure(s) is not being implemented. A Generator Cold Weather Constraint declaration, that no further corrective actions will be taken, is expected to be used sparingly.

The 2024-03 DT is intentionally leaving room for additional instances of Generator Cold Weather Constraints as it would be impossible to foresee every potential circumstance that could possibly necessitate a review of potential freeze protection technologies across the breadth of the ~~US~~United States and Canada and the breadth of generating unit types and ages that fall under this Standard.

Furthermore, the 2024-03 DT wants to ensure ~~that~~ the Standard language supports the adoption of new freeze protection measure practices, methods, or technologies while not immediately requiring a new freeze protection measure practice, method, or technology to be implemented industry-wide when a leading utility pilots a novel approach, as this would be a disincentive to utilities piloting new technologies. The 2024-03 DT encourages additional studying and implementation of freeze protection measures to remove Generator Cold Weather Constraints as appropriate over time.

In the June 2024 Order, there was a directive to change the frequency of Generator Cold Weather Constraint reviews to facilitate consideration of new freeze protection measure technologies to reduce the risk resulting from the need for a Generator Cold Weather Constraint. That change is captured in Requirement R9 discussed later in this Technical Rationale document.

Facilities

After reviewing ~~this~~the reference material and the efforts of the 2021-07 DT, the 2024-03 DT determined that EOP-012-3 should continue to apply to all ~~Bulk Electric System (~~BES~~)~~ generating units in order to ensure consistency in extreme cold weather preparedness. The Applicability section first defines "generating unit" as a BES resource. The NERC Glossary of Terms provides the foundation for what BES resources are included in the definition (see Inclusions I2 through I4). Additionally, Blackstart Resources are also specifically declared subject to the winterization requirements. Such Blackstart Resources, consistent with the NERC Glossary of Terms, are those units designated in the Transmission Operator's (TOP) restoration plans. Proposed EOP-012-3 clarifies which Facilities and their Generator Cold Weather Critical Components are subject to implementing freeze protection measures through specific language in Requirements R2 and R3. The 2024-03 DT briefly discussed ~~Generator Owner~~GO Category 2 Inverter-Based Resource (IBR) applicability to EOP-012-3 but it was noted the applicability is under review as part of the Registration of IBR Work Plan so no changes were presented.

Rationale for Requirement R1

The Project 2024-03's Technical Rationale language for Requirement R1 did not substantially change from 2021-07 DT language and, as such, use of DT below is referencing 2021-07 DT. Much of the criteria of R1 is carried over from the previously approved EOP-011 Standard and requires the GO to document several cold weather performance parameters for the unit. This information is valuable, and in some cases, must be shared with other entities. For Requirement R1 Part 1.1, the GO is required to calculate the Extreme Cold Weather Temperature (ECWT) for each unit using a reliable source of data (See the supporting document "Calculating Extreme Cold Weather Temperature"). The DT believes that the GO is in the best position to select the most representative weather information relative to its generating unit. The ECWT will be updated if a new lower ECWT is determined under the periodic review requirement of R1. Defining the operating limitations in Requirement R1 Part 1.2.1 will make affected personnel more aware of unit capabilities and constraints as well as systems and practices that may be necessary to ensure reliability in cold weather, particularly when alternative fuels are involved. In addition, the unit minimum temperature identified in Requirement R1 Part 1.2.2 is used to demonstrate compliance with Requirement R3 for existing units. The DT chose one hour of historical operating data recognizing ~~that~~ there is extremely limited historical operating data available for a unit below their ECWT. This was not to infer ~~that~~ the DT expects that existing generation will only reliably operate for one hour during an extreme cold weather event. The information contained within Requirement R1 Part 1.2 is required to be requested by the ~~Balancing Authorities~~BAs in TOP-003 to make sure they have the most accurate unit performance information possible for their reliability analysis during the winter season. It is critical, especially if a Corrective Action Plan, extension request for a Corrective Action Plan, or a Generator Cold Weather Constraint declaration is in effect, that the ~~Generator Owner~~GO keep Requirement R1 Part 1.2 information updated with those entities requiring said information. The 2024-03 DT did not add a notification Requirement to EOP-012-3 as TOP-003 and IRO-010 obligate the applicable entities (Balancing Authority (BA), Reliability Coordinator (RC), and Transmission Operator (TOP)) to have "*Provisions for*

notification of BES generating unit(s) during local forecasted cold weather to include" Requirement R1 Part 1.2 information. ~~Balancing Authority(ies), Reliability Coordinators, and Transmission Operators~~ BAs, RCs, and TOPs should have already reviewed their data specifications with regards to EOP-012. The flexibility that industry has required in the determination of data specifications - -were limited by industry approved Standard language regarding cold weather data and attributes. BAs, RCs, and TOPs should ensure complete coverage and timeliness of Requirement R1 Part 1.2 data submission within their data specifications especially during local forecasted cold weather.

It is recognized that the determination of a single unit minimum temperature is of limited value if applied without consideration of the other ambient conditions under which it was determined, that is, wind and precipitation. Consideration of wind and precipitation, along with the minimum temperature, provides a greater understanding of the potential generating unit capability for cold weather resource planning. The Standard requires that the GO include wind and precipitation data with their generating unit minimum temperature data when the data is available. The impact of deviations from this known temperature/wind/precipitation stated point are expected to be evaluated qualitatively. For example, if the historical minimum temperature occurred at low wind and dry conditions, and actual future cold weather event expected conditions are high winds with precipitation, planning personnel will recognize that a specific unit may not achieve the minimum temperature and can arrange for additional resources. The opposite also applies, i.e., if a design minimum temperature assumes some level of wind and precipitation and actual cold weather expectations are for low wind and dry conditions, planning personnel will recognize that there is increased likelihood that a generation resource may continue to be available below its minimum temperature. If no information about wind or precipitation is known, wind and precipitation are assumed to be zero at the minimum temperature until further information is obtained. The 2024-03 DT did provide updated language within the "Defined Terms" section of this Technical Rationale document to capture concerns regarding ECWT data availability.

Rationale for Requirement R2

The Joint Inquiry Report Key Recommendation 1f referenced recommendation 12 of the 2011 ~~report8~~ report[8] suggesting that consideration should be given to designing all new generation plants and designing modifications to existing plants (unless committed solely for summer peaking purposes) to be able to perform at the lowest recorded ambient temperature for the nearest location for which historical weather data is available.

~~The 2021-07 DT believed and 2024-03 DT believes that there needs to be allowances made for units that are in the development process, and for which the design phase may have already commenced. The 2021-07 DT recommended this requirement apply to generation going into service three (3) years after the effective date of EOP-012-1 (i.e., October 1, 2027, based on an effective date of October 1, 2024). The 2024-03 DT edited Requirement R2 in response to the June 2024 Order Paragraph 72 to create differentiation among units based on when the ECWT definition became effective (February 16, 2023).~~

8 https://www.nerc.com/pa/rrm/ea/February%202011%20Southwest%20Cold%20Weather%20Event/SW_Cold_Weather_Event_Final.pdf

~~The ECWT definition date was selected as it is a specific point in time where Generator Owners had clear direction for design implications as well as being unambiguous and auditable. Upon receiving feedback on that date, the 2024-03 DT determined that June 29, 2023 was a more appropriate brightline. This was the date where clearer direction was provided to the industry based on FERC decision. In addition, based on the Standard language and Implementation Plans of EOP-012-1 , April 1, 2028 was selected as a date to complete any Corrective Action Plans. The initial Implementation Plan of EOP-012-1 was slated to be effective 18 months after the effective date of the applicable governmental authority's order approving the Standard. The DT understanding of the material resulted in allowing a period of time, similar in length, to a unit not meeting their ECWT because of design timing not significantly beyond the original planned date of October 1, 2027. EOP-012-1 original language was based on the effective date of the requirement. In this case, Requirement R2 was effective 42 months after the effective date of the Standard. The FERC and DT expectation would be that units are prepared for operations at their ECWT (or below) by commercial operation for units in the near future and beyond (but no later than April 1, 2028.) Note that the date for Canadian entities may need adjustment by the appropriate governmental authority and so a footnote was added to allow that to occur. The changes proposed recognize the potential conditions that exist in terms of generators under consideration or construction but removes the means of achieving compliance through a Corrective Action Plan for units establishing their design criteria on or after June 29, 2023. Allowances for Corrective Action Plans to achieve the required design criteria were maintained as a means of compliance, but only for units which established design criteria prior to June 29, 2023. Additionally, the 2024-03 DT identified that Generator Owners may need to declare a Generator Cold Weather Constraint for units that commit to design criteria on or after the June 29, 2023 date under certain circumstances. Generation that begins commercial operation before October 1, 2027 would be subject to Requirement R3.~~

In developing the original version of the EOP-012 Reliability Standard, Reliability Standard EOP-012-1, the Project 2021-07 DT determined to impose different cold weather capability requirements for new generation compared to existing generation. Consistent with Key Recommendation 1f of the February 2021 Event Report, GOs would be required to design new units to operate to a specified ambient temperature (the ECWT) and weather conditions for the location, accounting for the cooling effects of wind. Due to the difficulty of performing the same level of design analysis on existing generation as on new generation, the high threshold of the ECWT, and the expected availability of historical data to support sustained operations at that ECWT, the Project 2021-07 DT determined to impose less stringent requirements for retrofitting existing generating units. The Project 2021-07 DT initially specified the "effective date of the requirement," which would be determined in accordance with the EOP-012-1 Implementation Plan, as establishing which set of generators would be "grandfathered" and subject to the less stringent requirements, and which generators would be subject to the more stringent requirements for new generation.

~~GOs with generating units that enter commercial operation on or after October 1, 2027 that contractually committed to design criteria before the ECWT definition approval date (June 29, 2023) and cannot operate for 12 continuous hours at the ECWT taking into account a concurrent twenty (20) mph wind speed shall have completed a Corrective Action Plan by April 1, 2028. It is recognized that Generator Cold~~

~~Weather Constraints may exist that prevent a new generating unit(s) from being capable of 12 continuous hours of operation at their identified ECWT.~~

~~GOs with generating units that enter commercial operation on or after October 1, 2027 that contractually committed to design criteria on or after the ECWT definition approval date (June 29, 2023) that are not able to comply with Requirement R2 would be required to declare a Generator Cold Weather Constraint in accordance with Requirement R8.~~

The 2021-07 DT chose 12 hours of continuous operation because it is a typical length of the nighttime in winter in most regions of the US and Canada and typically include the hours with the coldest experienced temperatures. The 2021-07 DT was of the opinion that tying the requirement to the 12-hour period would provide a reasonable level of reliability during a cold weather event. The 2021-07 DT chose a concurrent sustained 20 mph wind speed after an evaluation using the wind chill formula developed by the NWS in the United States. Though wind chill temperature is not an exact science, it is widely understood to reflect the **non-linear increased rate of convective heat loss due to air moving at different velocities**. Commonly available charts show wind chill temperatures as a function of actual air temperature at various wind speeds. Approximately 2/3 of the wind chill temperature drop between 0–60 mph is achieved at 20 mph. Using the NWS chart, this holds true for still air temperatures starting at 40ºF and dropping in 20-degree increments to -40°F. Further, 20 mph is a wind speed commonly experienced across the ERO and yet appropriately higher than the approximate average wind speeds in the United States and Canada, 6-12 mph and 8-11 mph respectively. ~~Generator Owners~~GOs should consider that wind concurrent with cold temperatures will decrease the amount of time for a unit's equipment (e.g., sensing lines) to reach the ambient temperature. While this may not be readily apparent in all cases, operational history of operating at a certain temperature may not equate (in terms of capability or duration of operation) to operating at that same temperature with a 20 mph (32 km/h) wind speed. Providing freeze protection measures, such as tarps or temporary wind block structures, may support the ability to operate longer during extreme cold weather. Each of these three probabilistically infrequent conditions (the ECWT, a steady 20 mph (32 km/h) wind, and a duration of 12 continuous hours at these conditions) is, in and of itself, conservative. When they have their effects combined, it results in a requirement that will significantly contribute to BES reliability during extreme cold weather conditions.

In developing Reliability Standard EOP-012-2 and a shorter Implementation Plan to meet the directives of the FERC February 2023 Order, the Project 2021-07 determined to replace "effective date of this requirement" with a date certain, October 1, 2027. In establishing this date, the 2021-07 DT considered the original proposed Implementation Plan for Reliability Standard EOP-012-1 which would have had this requirement effective April 1, 2028, FERC's directives to shorten this plan as it related to existing generation, the need to ensure generation is prepared for cold weather, as well as the fact that new generation coming online prior to October 1, 2027 is likely to be significantly advanced past the design phase when incorporating measures to provide capability in sustained wind conditions would be most cost effective and reasonable. Reliability Standard EOP-012-2 introduced the option for owners of new generating units to develop a Corrective Action Plan, in the event they could not meet the more stringent requirements for new generation upon entering commercial operation on or after October 1, 2027.

In the June 2024 Order (paragraph 72), FERC directed NERC to modify EOP-012-2 to address Corrective Action Plans for new generating units. The Commission stated that, while it was persuaded by NERC's rationale that there needs to be allowances made for units that are well into their construction phase to complete corrective action plans for elements already designed, it was concerned that Reliability Standard EOP-012-2 did not clearly differentiate between projects in an advanced stage of construction and those in a lesser phase of construction. The Commission found that "generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation." Based on this finding, the Commission directed NERC to revise the EOP-012 standard "to clarify that any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date."

In developing the posted draft of proposed EOP-012-3, the Standards Committee considered the FERC directive and the concern underlying that directive – that EOP-012-2 did not clearly differentiate between projects advanced in construction and those that were not.

It was thought that units that were coming online the first winter of the new requirements (winter 2027-2028), but that were designed prior to June 2023, would be significantly far in development and construction, and this represented a reasonable demarcation point for the Corrective Action Plan option.

Under proposed EOP-012-3 Requirement R2, **most** new generation entering commercial operation on or after October 1, 2027 will either need to: (1) meet the more stringent freeze protection measures called for new generation; or (2) declare a constraint that prevents them from doing so in accordance with Requirement R8. As concerns were raised about requiring Corrective Action Plans of GOs before they may be formally subject to compliance with standards, there is no requirement for GOs to complete Corrective Action Plans ahead of entering commercial operation in Requirement R2. This is consistent with the underlying intent of the June 2024 Order and more closely resembles the original EOP-012-1 requirements for new generation.

However, the Project 2024-03 DT believed that some allowance needed to be made for the units that were thought to be far along in the construction process, using designs that may have predated the development and approval of the EOP-012 standard and which may not meet the standard's requirements for new generation without significant additional work. The Project 2024-03 DT also considered that some of these generating units may even be fully constructed but not yet in "commercial operation" by October 1, 2027 due to the varying requirements for achieving that designation in different regions. While the Project 2024-03 DT did not believe many GOs developing new generating units would be in this position, the Project 2024-03 DT was cognizant of the burden eliminating the Corrective Action Plan option at this stage could place on these entities, especially when combined with the proposed changes to the Generator Cold Weather Constraint criteria. The drafting team was also concerned that if such GOs felt they had no choice but to delay the commercial operation date for their new units past

winter 2027-2028 to meet the new requirements, it could reduce needed generation at a time when NERC has projected an increased risk of reserve margin shortfalls in several areas of North America (see 2024 LTRA).

The Project 2024-03 DT considered several options to both address the FERC directive and account for this identified concern. These options included extending the "grandfathering" date past October 1, 2027 and redefining "commercial operation" to a less specific phrase, such as "in operation". However, the Project 2024-03 DT determined that maintaining the October 1, 2027 date as the "grandfathering" date was important in the interest of raising the bar for reliability in future cold weather seasons. It did not identify any compelling reason to change either that date or the existing measure of "commercial operation" from the previous versions of the standard. Rather, the Project 2024-03 DT concluded a time-limited Corrective Action Plan option for the first winter season the more stringent requirements for new generation are in effect (i.e. winter 2027-2028) was the most appropriate option to address the issue. This option would clearly separate the units that were far along in construction, and for whom such a limited option might be appropriate and consistent with the underlying findings in the June 2024 Order, and those that were not far along in construction.

In reviewing the Project 2024-03 DT's determination, the Standards Committee, in carrying out its responsibilities under Section 321 of the NERC Rules of Procedure, determined to carry forward this limited Corrective Action Plan option, with some modifications as needed to clarify the scope and intent in response to stakeholder comments.

Under proposed Requirement R2 Part 2.1, GOs of certain new generating units would have the option to develop a Corrective Action Plan if they are unable to implement the required freeze protection measures for new generation before entering commercial operation, and a Generator Cold Weather Constraint would not apply. For this option to apply, the GO must have first contractually committed to the design criteria for the unit before June 29, 2023, and the unit must first enter commercial operation between October 1, 2027 and March 31, 2028 (inclusive of the start and end dates). The Corrective Action Plan must be completed by April 1, 2028, a date which reflects consideration of NERC's original proposed effective date of EOP-012-1 requirements for new generation.[9]

It is important to note that this is simply an additional *option* for such GO, intended to enable them to enter commercial operation sooner and begin supplying needed power to the grid faster than if they were required to delay their commercial operation dates to provide the required capability.

The June 29, 2023 date represents the date by which the Project 2024-03 DT concluded that GOs would have had reasonable certainty regarding the freeze protection requirements for new generation under the EOP-012 standard and should have begun including them in their design criteria for new generating units. FERC issued its order approving EOP-012-1 and the definition of Extreme Cold Weather

9 Under NERC's original proposed implementation plan for EOP-012-1, this requirement for new generation would have become effective April 1, 2028. In its February 2023 Order, FERC directed NERC to modify the proposed EOP-012-1 implementation plan to reflect the urgency of the need to implement the standard, including to shorten the 60-month implementation plan for existing generating units. Reliability Standard EOP-012-2 shortened these dates and established October 1, 2027 as the "grandfathering" date for new generation.

Temperature in February 2023; however, the Project 2024-03 DT considered comments stating that there was still some regulatory uncertainty past this time, as several entities had filed for rehearing on various aspects of the standard. On June 29, 2023, FERC issued an order addressing arguments raised on rehearing, resolving any remaining uncertainty regarding the standard to which new generation would be expected to perform in the future (see FERC decision).

The Project 2024-03 DT and the Standards Committee considered stakeholder comments that this "designed by" date should instead be the effective date of the EOP-012-2 standard, October 1, 2024. Specifically, there were some stakeholder concerns that the standard would be applied retroactively to a date before the first version of the EOP-012 Reliability Standard became effective on October 1, 2024. However, using the EOP-012 effective date for this particular measure would not be consistent with the underlying intent of several directives the February 2023 and June 2024 Orders, which was to speed up the process by which generating units are prepared for the known reliability risks of extreme cold weather. Further, this June 29, 2023 date does not represent a compliance date, but rather the date by which entities would have been on reasonable notice of the specific nature of their new obligations and could take the appropriate steps to change their designs to facilitate compliance upon entering commercial operation several years later. In determining the appropriate demarcation point for the Corrective Action Plan option for new generation, the drafting team determined that units designed after this date should not be eligible.

Nevertheless, to provide further clarity as to intent and enforceability, the Standards Committee added language to clarify that, for this option to apply, the unit must first enter commercial operation between October 1, 2027 and March 31, 2028. (Recall that Requirement R2 applies only to generation entering commercial operation on or before October 1, 2027 – there is no provision for retroactive applicability.)

In summary, Requirement R2 Part 2.1 specifies that, for certain entities that undertook certain design steps before June 29, 2023 before the scope of new requirements became clear, those entities have the option of developing a Corrective Action Plan to achieve the required capability during their first winter in commercial operation, and they would not need to delay their commercial operation date if they can complete that plan by April 1, 2028. Entities seeking to use this option would be expected to demonstrate that they are eligible to use it, such as through dated contracts showing that it contractually committed to design criteria for the unit in question before that time. It was considered that entities would generally retain such contracts for their units under construction in the normal course of business and this would impose no additional burden.

For all other new generating units entering commercial operation on or after October 1, 2027, those units must either implement the more stringent capability required in Requirement R2 or declare a Generator Cold Weather Constraint. This includes units entering commercial operation after March 31, 2028 that are designed before June 29, 2023, as well as generating units entering commercial operation after October 1, 2027 that are designed after June 29, 2023. It is recognized that such generating units may need to delay their originally planned commercial operation date if they do not have the required capability and a Generator Cold Weather Constraint would not apply. *See* June 2024 Order at P 72. Further, even if an entity has the option to implement a Corrective Action Plan, it is not required to do so. It may delay its

commercial operation date until the required capability is installed, if a Generator Cold Weather Constraint would not apply.

Rationale for Requirement R3

The 2021-07 Drafting Team created a requirement for existing generating units, as defined in Requirement R3, to be able to operate at their ECWT. Many existing generating units have already demonstrated this capability. An early FERC order on EOP-012-1 rejected a one-hour timing requirement, consequently the 2021-07 DT chose to forego any specific time requirement in Requirement R3. If a generating unit cannot meet the requirements of Requirement R3, it is required to develop a CAP to add new freeze protection measures or modify existing freeze protection measures to be capable of operations at the ECWT (as calculated in Requirement 1).

Rationale for Requirement R4

General Considerations

Requirement R4 requires GOs to develop and maintain cold weather preparedness plans for their unit(s) and describes the information and documentation required in such plans. It is an expansion of the cold weather preparedness plan required under Requirement R7 of EOP-011-2 and is intended to be used and reviewed regularly by the GO. Originally, Requirement R4 Part 4.5 required the GO to annually inspect and perform necessary maintenance of freeze protection measures. The 2024-03 DT added some clarifying language to ensure that annual inspection and maintenance of freeze protection measures is applied specifically to Generator Cold Weather Critical Components. While other freeze protection measures may be applied to equipment by the ~~Generator Owner~~GO, the freeze protection measures included in the cold weather preparedness plan with annual inspections and maintenance are expected to be those applied to Generator Cold Weather Critical Components. Working in concert with other parts of EOP-012-3, including but not limited to Requirements R1, R5, R6, and R7, the substantive elements of the cold weather preparedness plan will be subject to review requirements, updated as necessary, and the responsible party (GO or GOP) is required to annually train personnel on the cold weather preparedness plan requirements.

Requirement R4 Part 4.1

In Requirement R4 Part 4.1, the GO is required to include in the cold weather preparedness plan the lowest ECWT, as calculated pursuant to Requirement R1, for each unit using reliable source(s) of data. The 2021-07 DT believed that the GO is in the best position to select the most representative weather information relative to its generating unit. The cold weather preparedness plan will be updated if a new lower ECWT is calculated under the Requirement R1 periodic review language.

Requirement R4 Part 4.2

Requirement R4 Part 4.2 is intended to capture, within the cold weather preparedness plan, the information being developed pursuant to Requirement R1 Part 1.2, which is carried over from the previously approved EOP-011 Standard and requires the GO to document several cold weather performance parameters for the unit. This information is valuable, and in some cases, must be shared with other entities consistent with the data specification requirements contained in TOP-003 and IRO-010. A requirement for the GO to document this information within the cold weather preparedness plan ensures the information is readily available and documented when the GO responds to a data specification. It should be noted that if a Corrective Action Plan extension request is approved, the underlying generator cold weather data, as called out in Requirement R1 Part 1.2, should be correctly identified by the ~~Generator Owner~~GO and provided to the ~~Reliability Coordinators, Balancing Authorities, and Transmission Operators~~RCs, BAs, and TOPs as requested. The June 2024 Order mentions this in Paragraph 3. The 2024-03 DT believes that the data specification Reliability Standards applicable to ~~Reliability Coordinators, Balancing Authorities, and Transmission Operators~~RCs, BAs, and TOPs (e.g., IRO-010 and TOP-003) require the entities to request the information and the GO is therefore obligated to provide the most current version of the relevant information within a Corrective Action Plan. The 2024-03 DT did not believe a notification Requirement was needed in EOP-012-3 in addition to those already existing in the data specification Reliability Standards. The 2024-03 DT encourages parties to work together to ensure the most accurate and up-to-date information is provided, especially when conditions increase risk to reliable operations. See the Technical Rationale for Requirement R1 for substantive rationale regarding the operating limitations and generating unit minimum temperatures documented in the cold weather preparedness plan.

Requirement R4 Part 4.3

In Requirement R4 Part 4.3, the GO identifies the Generator Cold Weather Critical Components to help inform their decision on where to implement appropriate freeze protection measures. The NERC *Reliability Guideline, Generating Unit Winter Weather Readiness – Current Industry Practices*[10], presents a suggested list of components that GOs may choose to utilize when developing their own Generator Cold Weather Critical Component inventory. The GO shall develop and maintain a list of Generator Cold Weather Critical Components for each unit.

Requirement R4 Part 4.4

Requirement R4 Part 4.4 requires GOs to document the freeze protection measures implemented on Generator Cold Weather Critical Components. These freeze protection measures should include those to reduce the cooling effects of wind. Requirement R4 does not require GOs to install new freeze protection measures to reduce the cooling effects of wind, but rather to identify freeze protection measures for Generator Cold Weather Critical Components that will protect against heat loss and the effect of freezing precipitation, where applicable, and document those measures (e.g., water-resistant insulation, protective shielding, insulated boxes, etc.). These measures could include temporary measures as well, such as wind breaks, but there is no expectation for entities to list all climate-controlled areas as freeze protection measures. Specifically, the freeze protection measures applied to Generator Cold Weather Critical Components must be captured in the cold weather preparedness plan.

Requirement R4 Part 4.5

Requirement R4 Part 4.5 is largely carried over from the previously approved EOP-011 Standard and requires annual inspection and maintenance of the freeze protection measures applied to Generator Cold Weather Critical Components identified in the cold weather preparedness plan. The 2024-03 DT added clarifying language to emphasize the need to effectively mitigate risk on the Generator Cold Weather Critical Components. This Requirement ensures these freeze protection measures will be ready and serviceable when needed.

Rationale for Requirement R5

The 2024-03 DT noted that there could be a combination of operations and maintenance personnel that require training, so minor adjustments were made to that extent. Additionally, the personnel may not be physically located at the generator site depending on how an entity implements their cold weather preparedness plan(s).

Rationale for Requirement R6

Key Recommendation 1d: To require Generator Owners that experience outages, failures to start, or derates due to freezing to review the generating unit's outage, failure to start, or derate and develop and implement a corrective action plan (CAP) for the identified equipment and evaluate whether the CAP applies to similar equipment for its other generating units. Based on the evaluation, the Generator Owner will either revise its cold weather preparedness plan to apply the CAP to the similar equipment or explain in a declaration (a) why no revisions to the cold weather preparedness plan are appropriate, and (b) that no further corrective actions will be taken. The standard drafting team should specify the specific timing for the CAP to be developed and implemented after the outage, derate, or failure to start, but the CAP should be developed as quickly as possible and be completed by no later than the beginning of the next winter season.

The Key Recommendation from the Joint Inquiry Report recommended a Reliability Standard that requires GOs to develop a Corrective Action Plan for generating units that experience outages, failures to starts, or derates due to freezing. The Joint Inquiry Report identifies that most of the outages and derates in the February 2021 event were due to freezing of instrumentation, transmitters, sensing lines, or wind turbine blades (p 166 in the Joint Inquiry Report). As such, the 2021-07 DT followed the Joint Inquiry Report recommendation to require a Corrective Action Plan when the apparent cause of the event is freezing. The 2021-07 DT developed parameters around these events to clarify a reasonable baseline of what level of derate qualified as an event and provide additional language to identify what constitutes a start-up failure. With the additional clarifications, the 2021-07 DT determined that the Reliability Standard would benefit from a defined term, to clearly and efficiently state what constitutes an event. The result was a defined term, Generator Cold Weather Reliability Event, that describes the circumstances for which a Corrective Action Plan is required (i.e., when a freezing event affects the equipment within the control of

the GO). The defined term made the Reliability Standard easier to understand and implement by providing clear and reasonable factors to determine whether the impact of an event requires mitigation. However, because of the June 2024 Order, the 2024-03 DT updated Requirement R6 to provide clearer timeline obligations for those units that suffer a Cold Weather Reliability Event. In general, the 2024-03 DT understands that if a Generator Cold Weather Reliability Event occurs, ~~Generator Owners~~GOs will remediate the issue as soon as possible.

General Considerations for All Corrective Action Plans

To simplify the proposed requirements related to creating a Corrective Action Plan, the 2021-07 DT used the NERC Definition of a Corrective Action Plan. The Corrective Action Plan definition reads "A list of actions and an associated timetable for implementation to remedy a specific problem." As written, the definition requires two parts for a document to qualify as a Corrective Action Plan, i.e., a list of items to be addressed and a timeline for completion. A Corrective Action Plan without both a list of actions and the timeline to implement is not complete. The 2024-03 DT provided additional language for Corrective Action Plans to clarify expectations for those Corrective Action Plans created as a result of a Generator Cold Weather Reliability Event and other Corrective Action Plans referenced throughout the Requirement language. The resulting language kept the underlying structure developed during previous Projects but clarified and added information as needed to meet the June 2024 Order.

The Corrective Action Plan requirement applies to Generator Cold Weather Reliability Events as well as other instances of required actions to support reliable operations within the EOP-012-3 Standard Requirements. It should be noted that nothing in this standard prevents a GO from taking its own corrective actions resulting from events that do not meet the criteria of a Generator Cold Weather Reliability Event. Startup failure criteria were based on the GADS definition with the removal of "following an outage or reserve shutdown", since the definition of reserve shutdown is different in GADS than it is in some of the Regional Transmission Organizations (RTOs).

Requirement R6 requires the GO to develop, implement, and complete a Corrective Action Plan prior to the first day of December following a Generator Cold Weather Reliability Event. Note that the 2024-03 DT considered early occurrences (e.g., October or November) of Generator Cold Weather Reliability Events and provided a footnote to allow remedial activities to be completed by December 1 of the following calendar year. The December 1 date was chosen based on the FERC directives and the urgency stated within the June 2024 Order regarding this risk. This timeframe was maintained by the 2024-03 DT to allow GOs to review multiple events holistically following a winter season, if that scenario occurs, and create one Corrective Action Plan for components with common failure causes. Care should be taken when developing a multi-unit or multi-event Corrective Action Plan to ensure it meets the Corrective Action Plan criteria for each unit (e.g., actions and timetables may be different.)

The 2021-07 DT determined that Corrective Action Plans would be required for any freezing event that occurs at temperatures at or above the site's ECWT in accordance with the definition of a Generator Cold Weather Reliability Event. Using the site's ECWT as the threshold, as opposed to the generator unit minimum temperature as determined by the GO, achieves the following:

- Provides a consistent basis for the temperature at which Corrective Action Plans are required for all GOs
- Provides a consistent basis for when Corrective Action Plans are required for all generation types
- Provides a consistent basis for when Corrective Action Plans are required regardless of the level of effort that GOs may have applied to-date winterizing their generators such that they can operate to the ECWT that their sites will reasonably experience
- Removes any incentive (perceived or real) to not further winterize GOs sites to meet the ECWT at the GO site by not providing a window where one site might not be subject to the Corrective Action Plans requirement while sites in the same vicinity experiencing the same temperatures are subject to this requirement
- Removes any disincentive for GOs to design the units to operate well below the ECWT for a site by not requiring them to perform Corrective Action Plans while sites in the same vicinity experiencing the same temperatures are subject to this requirement

The 2024-03 DT provided clarifying language to have Corrective Action Plans developed in response to Generator Cold Weather Reliability Events developed and completed by the first day of December of the winter season following the Generator Cold Weather Reliability Event. Allowances for events which occur early winter season, which varies across the North American continent, were provided with the expectation that more transient fixes occurring after a Generator Cold Weather Reliability Event would be applied quickly but allowing a reasonable time horizon for compliance with this Requirement. A Corrective Action Plan triggered by a Generator Cold Weather Reliability Event and for which the apparent cause is the failure of relatively simple existing piece of freeze protection equipment, the scope of the Corrective Action Plan may be documented after the fact. Such prompt repairs may be completed before creation of the Corrective Action Plan, and the GO may complete the implementation of the Corrective Action Plan simply by evaluating the requirements of R6 and documenting how and when the repair work was completed. An example of this circumstance would be a freezing event caused by a single heat trace circuit failure which would have been sufficient to prevent the event had it not failed.

The June 2024 Order also directed changes affecting the application of a Generator Cold Weather Reliability Event Corrective Action Plans to other units within a ~~Generator Owner's~~GO's fleet. The 2024-03 DT added clarifying language to provide guidance on what the extent of condition (i.e., the review of other generating units) should encompass to help alleviate concerns raised by the industry during the comment and ballot period. Each GO should already know, per Requirement R4, the freeze protection measures on Generator Cold Weather Critical Components. The GOs also have the responsibility, per Requirement R4, to annually maintain and inspect the freeze protection measures on Generator Cold Weather Critical Components. Effectively those Requirements would support quick identification of same or similar equipment susceptible to freezing.

The 2024-03 DT, and later the Standards Committee in the exercise of its responsibility under Section 321 of the NERC Rules of Procedure, established a 12-calendar month window from the time of the originating Generator Cold Weather Reliability Event to complete its fleet-wide review for similar vulnerabilities and

develop or update such a ~~plan and~~Corrective Action plan to address them. In response to multiple stakeholder comments, the Standards Committee provided a 24-calendar to 36-calendar month window (initiated based on the date of the Generator Cold Weather Reliability Event) to implement ~~it. This timeframe allows Generator Owners~~corrective actions. GOs that complete their fleet-wide reviews sooner than the 12 months allowed would have a longer period of time overall to implement any required corrective actions, incentivizing prompt action to identify the extent of condition across a fleet. While the FERC directive suggesting a potentially longer staggered implementation was considered for more complex implementations, it was determined that developing specific requirements for staggering often presents many logistical challenges, and it may not promote an orderly and efficient implementation depending on the issue needing to be addressed. Allowing up to 36 months total to complete corrective actions would allow GOs with larger fleets to accommodate any required changes. ~~Considering~~Industry experience with Winter Storms URI and Elliott suggests that the timelines are sufficient in general to mitigate reliability risks. However, a Corrective Action Plan extension may be requested~~, the DT felt that 24 calendar months was sufficient time noting that even large fleets may not have large numbers of units suffering a possible Generator Cold Weather Reliability Event with a similar freeze protection measure.~~ if a particularly complex implementation issue arises requiring longer time to implement.

Entities should evaluate the issue with the freeze protection measure that may have initiated the Generator Cold Weather Reliability Event to see if the maintenance and inspection efforts need to be adjusted (at the unit that suffered the Generator Cold Weather Reliability Event as well as at other similar units with similar freeze protection measures applied to Generator Cold Weather Critical Component(s)).

The existence of a Corrective Action Plan should not discourage the ~~Generator Owner~~GO from applying any other actions necessary and feasible to prepare a unit to perform at extreme cold weather temperatures during the Corrective Action Plan implementation period.

The 2024-03 DT also created language that allows for Corrective Action Plan extension requests using the NERC Process. ERO Enterprise staff developed the NERC Process that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule). While TPL-007 has not been utilized extensively, the NERC Process is flexible enough to manage the expected submittals. The DT is not in control of updates to the ~~process~~NERC Process but the NERC staff have been engaged and responsive to industry concerns noted during the Standard development timeline. The NERC Process will allow a thorough review in a timely manner for any Corrective Action Plan extension requests including those that go beyond the 24 or 48 calendar month timetables. While there may be actions impacting the implementation and completion of Corrective Action Plans beyond the control of ~~Generator Owners~~GOs (e.g., supply chain issues), the ~~Generator Owners~~GOs should accelerate completion of corrective actions as much as possible to support reliable operations.

The 2024-03 DT updated language regarding Generator Cold Weather Constraints to clarify expectations. Please review Requirements R8 and R9 and Attachment 1 for further discussions of Generator Cold Weather Constraints.

In carrying out its responsibilities under Section 321 of the NERC Rules of Procedure, the Standards Committee determined to carry forward the general framework developed by the Project 2024-03 DT, with some modifications. First, to address stakeholder concerns about the lack of a clear deadline for implementing Corrective Action Plans, the Standards Committee added a deadline to develop Corrective Action Plans for units experiencing the Generator Cold Weather Reliability Event. This deadline would be the same as the date any required Corrective Action Plans for the units must be completed – by the first day of the first December following the event (or for early season events, the first day of the first December of the following year). By adding this deadline, the Standards Committee intends to add clarity as to the latest date by which such Corrective Action Plans must be developed, while recognizing that the main reliability benefit will come from completing the corrective actions in an expeditious manner. As Corrective Action Plans contain important information to document causes and corrective actions that may inform future winter operations, there is still a reliability benefit to develop these Corrective Action Plans, even if any corrective actions in the Corrective Action Plan are completed in short order.

Rationale for Requirement R7

In EOP-012-2, R7 was expanded from EOP-012-1 to provide additional definition on the requirements to implement a Corrective Action Plan, and to meet the direction for this requirement set by the February 2023 FERC Order. One such direction was to define expectations on implementation timelines for Corrective Action Plans. Under EOP-012-2 R7, Corrective Action Plans were divided into two categories: 1) those which address existing freeze protection measure(s), and 2) those which require new equipment or freeze protection measure(s). The former category required completion of the Corrective Action Plan to remedy the cause(s) within 24 months, and the latter required completion of the Corrective Action Plan within 48 months. The 2021-07 DT modeled this timeline structure after similar Corrective Action Plan implementation requirements in TPL-007. These are maximum durations and entities are expected to work diligently to correct issues and take prompt actions to mitigate future issues as soon as practical. At the same time, the 2021-07 DT recognized that the following time-consuming activities make the 24 and 48 calendar months maximum timelines reasonable: scoping applicability to similar units, freeze protection engineering and design, project development, budgeting processes, material supply lead times, outage scheduling, skilled labor availability, and startup/commissioning. However, the June 2024 Order established directives to clarify timelines and responsibilities associated with Corrective Action Plans. The 2024-03 DT chose to specifically remove Corrective Action Plan obligations for Generator Cold Weather Reliability Events and place those in Requirement R6. For Requirement 7, the 2024-03 DT provided clarifying language regarding existing and new freeze protection measures and the associated completion timelines. Language was provided for Corrective Action Plans that may include changes to existing freeze protection measures and addition of new freeze protection measures to help clarify expectations for completing the corrective actions. The Project 2024-03 DT discussed the adjectives “new” and “existing” freeze protection measures as it is used within the Requirements. If there is the failure of a freeze protection measure (e.g., heat trace) and that freeze protection measure is replaced with the same/similar/commonly used technology that is considered “existing”. The change of a heat trace from 40 foot to 60 foot or change in the amperage capability of the heat trace is not a “new” freeze protection

measure. A change in lightbulb wattage in an enclosure should not be considered "new". The industry did provide some examples of "new" freeze protection measures (i.e., new permanent structures or new technologies not already applied) that may take longer to implement depending upon the nature of the freeze protection measure. A wind block made of tarps and a wooden or steel frame should not be considered "new" and require 48 months to implement even if the site did not have a wind block already. Care should be exercised by GOs in the use of "new" and "existing" freeze protection measures and the resulting Corrective Action Plan timelines. Industry experience with Winter Storms URI and Elliott suggests that the shorter timelines are sufficient in general to mitigate reliability risks. Entities are expected to work diligently to correct issues and take prompt actions to mitigate future recurrence. The 2024-03 DT updated Parts 7.1.3. and 7.1.4 for completeness to ensure updates would be made to document needed changes to the cold weather preparedness plan(s) to eliminate recurrence of issue(s) identified in the Corrective Action Plan. In clarifying these timeframes, the 2024-03 DT considered the FERC directives.

Within the revised Requirement R7, the GO is required to implement the Corrective Action Plan within a timetable defined by the GO in the Corrective Action Plan but limited by maximum durations in Part 7.1. If the GO is unable to complete the Corrective Action Plan within the time limits in Part 7.1, or the corrective action(s) change, the GO is required to update the Corrective Action Plan with justification. GOs that are unable to complete the Corrective Action Plan due to a Generator Cold Weather Constraint are required under Part 7.3 to create a declaration of the Generator Cold Weather Constraint which shall be provided to the Compliance Enforcement Authority per Requirement R8. Further requirements for the Generator Cold Weather Constraints are provided under Requirements R8 and R9.

The 2024-03 DT also created language that allows for Corrective Action Plan extension requests using the NERC Process. ERO Enterprise staff developed the NERC Process that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule). The NERC Process will allow a thorough review in a timely manner for any Corrective Action Plan extension requests including those that go beyond the 24 or 48 calendar months. The 2024-03 DT utilized the precedent set by TPL-007 to ensure the unique circumstances of each request will be considered while also avoiding potential compliance burdens which may not have a corresponding reliability benefit (e.g. specific timelines for submission and approval of extension requests). While there may be actions impacting the implementation and completion of Corrective Action Plans beyond the control of ~~Generator Owners~~GOs (e.g., supply chain issues), the ~~Generator Owners~~GOs should accelerate completion of corrective actions as much as possible to support reliable operations. It is expected that extension requests will be limited in nature. ~~Generator Owners~~GOs will have to provide clear justifications with supporting materials within the extension request. Due diligence in ordering equipment, obtaining permits, etc., will be considered as part of the determination of whether a particular set of facts constitute circumstances beyond the control of the entity. Denials of extension requests will be minimized if ~~Generator Owners~~GOs work diligently to correct issues and take prompt actions. Denial of an extension means the initial timelines for corrective actions must be met.

The 2024-03 DT updated language regarding Generator Cold Weather Constraints to clarify expectations. Please review Requirements R8 and R9 for further discussions of Generator Cold Weather Constraints.

If one or more actions within a Corrective Action Plan fall under a Generator Cold Weather Constraint declaration, it is the intent of the DT that only those constraint affected actions would not be implemented as part of the Corrective Action Plan. The remaining corrective actions should be implemented per the timelines provided unless dependent upon the corrective action triggering the Generator Cold Weather Constraint declaration.

Rationale for Requirement R8

In the February 2023 FERC Order, the Commission expressed concern that a GO may make a Generator Cold Weather Constraint declaration without informing planning and operational entities (e.g., the ~~Balancing Authority~~BA) that are expecting the reliable operation of the generating unit to its ECWT. An additional concern was that the Generator Cold Weather Constraint declarations may be used by a functional entity as an opt-out of compliance with requirements set forth in the standards or in a corrective action plan. To mitigate the concern, the Commission directed NERC to work with Commission staff and submit a data collection and assessment plan that contains information related to GO constraint declarations and explanations thereof. The 2021-07 DT expected that ERO Enterprise compliance staff will be responsible for reviewing declared Generator Cold Weather Constraints and assessing compliance with the Generator Cold Weather Constraint definition criteria in accordance with established processes. The June 2024 Order directives included more direct language that required NERC to receive, review, evaluate, and confirm the validity of each Generator Cold Weather Constraint in a timely manner. Additionally, the June 2024 Order directives required an increase in the frequency of reviews of Generator Cold Weather Constraints. If a Corrective Action Plan extension request is denied by the CEA, then the GO may request a joint CEA/NERC review of the denial.

The 2024-03 DT updated Requirement R8 to require the GO to submit, to the Compliance Enforcement Authority, a Generator Cold Weather Constraint in accordance with Attachment 1 under specific timelines. The ERO Enterprise staff have developed the Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule) as a foundation for the Generator Cold Weather Constraint process. The NERC Process will allow a thorough review in a timely manner for any Generator Cold Weather Constraint submitted. The 2024-03 DT created Attachment 1 to provide clear expectations on Generator Cold Weather Constraint conditions. Attachment 1 contains some known Generator Cold Weather Constraint conditions as well as examples of other case-by-case Generator Cold Weather Constraint conditions that may also be considered valid. To be clear, all Generator Cold ~~weather Constraints~~Weather Constraint declarations require submittal per the NERC Process. The 2024-03 DT could not create an exhaustive list of Generator Cold Weather Constraint conditions but provided language that allows professional judgement to be utilized. The 2024-03 DT believes the NERC Process in conjunction with Requirement R8 and Attachment 1 effectively meets the FERC directive regarding receiving, reviewing, evaluating, and confirming the validity of Generator Cold Weather Constraints.

~~Initially EOP-012-1 required an annual review of Generator Cold Weather Constraints. That frequency of reviews was subsequently changed to five years in EOP-012-2. The June 2024 Order directed that the review frequency be increased from the five-year periodicity. While Generator Owners should perform a review and update any constraint declarations as needed, the 2024-03 DT has developed language requiring a review of validated Generator Cold Weather Constraints every 36 calendar months.~~
To address concerns about potential administrative burdens associated with repeated, known issues at generating unit(s) with a valid Generator Cold Weather Constraint, the Project 2024-03 DT developed Part 8.4. Part 8.4 provides that, in such a case, the GO will provide notice to the CEA. This helps maintain visibility over known reliability issues while reducing the administrative burdens associated with repeating requirements in this case.

The 2021-07 DT believed that Generator Cold Weather Constraint declarations would be the exception, but it is clear to the 2024-03 DT that certain conditions may exist (based on general weather patterns) that will increase the amount of Generator Cold Weather Constraint declarations and subsequent submittals. In anticipation of that scenario, and following the June 2024 Order, the 2024-03 DT considers the NERC Process a valuable tool to capture data that may help future understanding of the effectiveness of the ECWT. The February 2023 FERC Order and subsequent NERC filing require the collection of data to evaluate the effectiveness of the EOP-~~12-3 standard~~012-3 Reliability Standard.

Updated Generator Cold Weather Constraint declarations would also require an update to the operating limitations provided via data specifications to the entities overseeing reliability (e.g., ~~Balancing Authority, Transmission Operator, or Reliability Coordinator~~BA, TOP, or RC). In this manner, information relevant to valid Generator Cold Weather Constraint declarations are made available to the planning and operational entities pursuant to their data collection authority contained in TOP-003 and IRO-010. BAs, RCs, and TOPs should ensure complete coverage and timeliness of cold weather related data submission within their data specifications especially during local forecasted cold weather.

Rationale for Requirement R9

Based on multiple comments regarding Requirement R8~~ and~~, the FERC directive regarding periodicity of reviews, and what a GO should do if a Generator Cold Weather Constraint is determined to be no longer valid, the 2024-03 DT ~~pulled this Requirement R8 language out as~~developed a separate new Requirement R9.

Initially EOP-012-1 required an annual review of Generator Cold Weather Constraints. That frequency of reviews was subsequently changed to five years in EOP-012-2. The June 2024 Order directed that the review frequency be increased from the five-year periodicity. While GOs should perform a review and update any Generator Cold Weather Constraint declarations as needed, the 2024-03 DT has developed language requiring a review of validated Generator Cold Weather Constraints every 36 calendar months.

Initially, the Project 2024-03 proposed that reviews be conducted every 24 calendar months. There were multiple concerns raised about the 24 calendar month periodicity ~~and~~. Based on consideration of these concerns, the 2024-03 DT chose, and the Standards Committee , in carrying out its responsibilities under Section 321 of the NERC Rules of Procedure, determined to carry forward the decision, to extend it to 36 calendar months. Reliability Standard CIP-014, a Reliability Standard addressing another significant risk, is proposing a review every 36 calendar months. Based on information shared at the Technical Conference held on November 12, 2024, changes to some technologies that may affect Generator Cold Weather Constraints may take a significant amount of time (well in excess of 36 months) to become available. By shortening from the five calendar years, the 36 calendar month timeline provides a reasonable approach to meeting the Commission's directives without creating undue administrative burden to periodically monitor if Generator Cold Weather Constraints remain valid or if new technologies have become available that effectively obviate the originally validated ~~constraint~~Generator Cold Weather Constraint.

Part 9.1 addresses what a GO must do if it finds that a declared Generator Cold Weather Constraint is no longer valid. For example, a new technology exists that would address the freezing issue, and no other Generator Cold Weather Constraint criteria would apply. In that case, the GO must develop a Corrective Action Plan or update an existing Corrective Action Plan (if applicable), in accordance with the requirements for Corrective Action Plans in Requirement R7. This would include timetables specifying completion of the corrective actions in accordance with that requirement.

Attachment 1

The 2024-03 DT chose to utilize a limited and discrete list of known Generator Cold Weather Constraints as well as a description of other case-by-case situational descriptions that may constitute Generator Cold Weather Constraints. All declared Generator Cold Weather Constraints must be confirmed as valid by the Compliance Enforcement Authority. Nevertheless, the limited and discrete list is intended to describe specific circumstances that, if met, would have a very high probability of being approved. The 2024-03 DT discussed providing clarity with examples (as noted by FERC Order Paragraph 47) knowing that additional instances or conditions that may be considered a Generator Cold Weather Constraint may exist.

Per the FERC Order, NERC staff ~~is~~are responsible to provide a process describing the receipt, evaluation, approval (as needed), and validation of Generator Cold Weather Constraints. This process is captured in the Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") document.

Once a declaration is approved by the CEA it is considered valid.

The 2024-03 DT is intentionally leaving room for additional instances of Generator Cold Weather Constraints to be presented as it would be impossible to foresee every potential set of circumstances that could possibly constitute a constraint. Furthermore, the 2024-03 DT wants to ensure that the Standard language supports the development and adoption of new freeze protection measures, practices, methods, or technologies while not immediately requiring that the new freeze protection measures, practices, methods, or technologies be implemented industry-wide. The 2024-03 DT encourages additional study and implementation of freeze protection measures to remove Generator Cold Weather Constraints, as appropriate, over time.

The 2024-03 DT updated the definition of Generator Cold Weather Constraints to provide clarity as directed by FERC. In addition to modifying the definition, the 2024-03 DT developed Attachment 1. Requirement R8 provides entities a clear understanding of what is expected when managing Generator Cold Weather Constraints and directly references use of Attachment 1. The ~~list of known~~DT broadly categorized Generator Cold Weather Constraints ~~focuses on technical issues or conditions that are widely understood to exist which may have limited or no freeze protection measures to implement. For example, the DT recognizes that some existing wind turbine towers were not constructed of materials that will meet lower ECWT values and therefore has established a Generator Cold Weather Constraint for those situations.~~into two types; known and those that would be determined on a case-by-case basis.

The first of the known Generator Cold Weather Constraints, addressing low temperature operability of wind turbine towers, was debated at length in the 2024-03 DT meetings. Discussion among the Drafting Team, observers, and in the Technical Conference indicated a typical limit of -22°F for operation of wind turbines. This typical limit may apply specifically to heated areas or equipment within the nacelle and not be associated with other known ductile-to-brittle transition temperatures for specific mild steel alloys used in turbine towers. Nevertheless, unless a tower is constructed of Austenitic stainless steel or other face-centered cubic atomic structure materials, such a transition temperature generally will exist. The

dynamic stresses of operating the wind turbine below such transition temperatures could imperil the structure itself. Anecdotally, it was noted that this limit would cause this Constraint to apply to a portion of the north-central United States and central Canada. It was broadly recognized that the standard needs to recognize and allow this limitation for existing wind turbine tower equipment, and the DT sought to determine an appropriate date beyond which it should be expected that industry can meet low temperature operating capability. Ultimately, October 1, 2029 was established as the manufacturing limit date for compliance of new wind turbine towers. This was determined based on an accelerated interpretation of general feedback from the 2024-03 Technical Conference indicating that generational technological development cycles in the industry are on the order of 5-7 years. The October 1, 2029 date would allow four years beyond the anticipated implementation date of EOP-012-3 (October 1, 2025) for manufacturers to select, apply, test, and begin production of wind turbine towers constructed of materials capable of lower temperature operation appropriate for those locations with Extreme Cold Weather Temperatures below the limits associated with current tower material designs[10]. In addition, the 2024-03 DT also received feedback through industry outreach from participants indicating delivery and construction lead times for wind turbines were years into the future, providing additional support for the selected dates. The language in the Standard also requires those units to enter commercial operation before October 1, 2031, which prevents an entity from simply procuring an abundance of equipment prior to the manufacturing date limit (October 1, 2029) and constructing them over a long period of time in the future. The two-year gap was established to give a reasonable timeframe for entities to receive, construct, and commission the equipment. The DT felt that these dates would appropriately allow projects that are currently in different phases of planning or execution to be completed while also creating end dates beyond which wind turbine towers must be designed and erected to meet all aspects of EOP-012-3 and this particular known Generator Cold Weather Constraint would no longer be considered valid.

Regardless of a Generator Cold Weather Constraint being of the “known” type, a GO is still required to submit known Generator Cold Weather Constraints for approval.

The case-by-case situations and circumstances that may constitute a Generator Cold Weather Constraint are described separately. The enumerated list in Attachment 1 is not intended to be exhaustive but rather to provide clear descriptions of circumstances that may constitute Generator Cold Weather Constraints depending on the facts and circumstances presented by the GO. Generator Operators bear the burden of defending and supporting their declared constraints while the ERO bears the burden of confirming them as valid, or not.

~~In addition~~Among these circumstances, the DT recognized the need to balance potential adverse effects to the Bulk Power System reliability ~~from~~caused by requiring implementing of a freeze protection measure with ~~benefits to~~the beneficial effects of doing the same. Because such circumstances can and do

[10] The DT also consulted with a representative from a wind OEM with experience in operations in Northern Europe, United States, and Canada, all areas that can experience extremely low temperatures. This representative indicated that there were no wind turbine tower designs in their current and projected future global portfolio that operate at temperatures colder than -30 degrees Celsius (-22 degrees Fahrenheit). The OEM follows IEC 61400-1 Ed 2019 (Chapter 14 Cold Climate)(https://webstore.iec.ch/en/publication/26423) and when operations as low as -30 degrees Celsius is desired, low temperature environmental modification kits are added.

change by location and over time, this weighing process is best done on a localized basis~~. Therefore the DT has selected a value of three precent, or another value supported by the appropriate functional entity, to mitigate such adverse effects.~~ and ideally interactively between the GO and other affected functional entities while broadly considering immediate and potential future impacts of a declared constraint.

Two particular cases seemed particularly well-suited for a threshold for quantification of impacts: those that reduce a generating unit's real or reactive power when the freeze protection measure is not in place and those that would reduce net dependable capacity during summer or at Peak Demand. These two cases are addressed in sections 5.c. and 5.d. of Attachment 1. In them, the DT has selected a value of three (3) percent, reduction as an appropriate level of impact above which the deleterious impact to the Bulk Power System resulting from requiring a specific freeze protection measure may be appropriately determined to outweigh the benefits of applying the measure. Recognizing that local and temporal conditions are best understood, measured and predicted by the GO and affected functional entities, the DT chose to allow flexibility in the selected three percent value when a different value is supported by the appropriate functional entity as more supportive of reliable operation of the grid.

In addition to being a sensible threshold, use of a three (3) percent value has precedent in BAL-002-WECC-3 where it is used as a barometer for reliable operations in terms of Contingency Reserve.

The language provided in both the known and case-by-case portions of Attachment 1 is meant to describe criteria that are objective, unambiguous, and auditable.

~~Regardless of~~In all cases, when submitting a Generator Cold Weather Constraint ~~being of the "known" type, a Generator Owner is still required to submit "known~~declaration to the CEA per Requirement R8, the GO must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the GO will apply. If a Generator Cold Weather Constraint declaration indicates that the application of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk-Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s), the documentation that defends and supports the constraint could properly include any assessment that the applicable functional entity (e.g., BA or RC) might agree to provide concerning the impact to the reliability of the Bulk-Power System if the constraint were to be deemed invalid by the CEA. Such an assessment, or other means of demonstrating agreement from an appropriate functional entity, would serve to strengthen the Generator Cold Weather ~~Constraints for approval. The case-by-case determination section of~~ Constraint declaration.

It should also be emphasized, as written in Attachment 1~~ provides examples of conditions or issues that may constitute a valid~~, that an approved Generator Cold Weather Constraint ~~depending on the facts and circumstances presented by the Generator Owner. The language provided is meant to be objective, unambiguous, and auditable.~~declaration for any specific Generator Cold Weather Critical Component

does not relieve the GO of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

With all Generator Cold Weather Constraints, it is the responsibility of the ~~Generator Owner~~GO to provide supporting materials to facilitate approval and validation of the Generator Cold Weather Constraint by the ERO Enterprise. As mentioned in the Requirement R8 Technical Rational discussion, the NERC Process was developed to support the FERC directives in the June 2024 Order. The 2024-03 DT believes the new definition of Generator Cold Weather Constraint, updated language throughout the Standard with emphasis on Requirement R8, and the contents of Attachment 1 provide significant clarity to industry on what is expected for Generator Cold Weather Constraints to be considered valid.

(Modified graphics)

rt: Below is a graphical representation demonstrating the relationship between Requirements:

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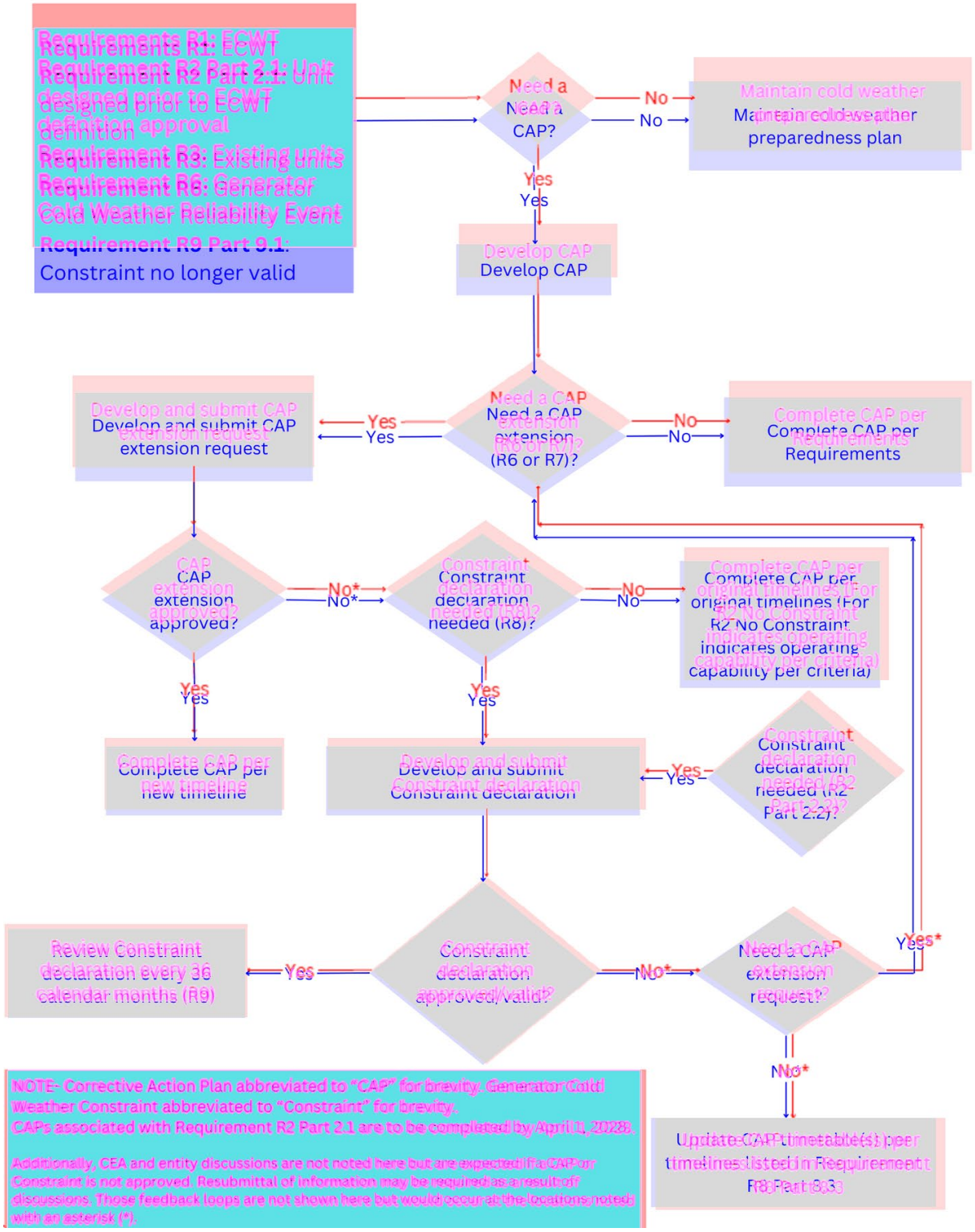

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NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Unofficial Comment Form

Project 2024-03 Revisions to EOP-012-2

Do not use this form for submitting comments. Use the Standards Balloting and Commenting System (SBS) to submit comments on draft three of **EOP-012-3 Extreme Cold Weather Preparedness and Operations** by **8 p.m. Eastern, Wednesday, March 12, 2025.**

Additional information is available on the project page. If you have questions, contact Senior Standards Developer, Ben Wu (via email), or at 470-542-6882.

Background Information

NERC developed the original version of the generator cold weather preparedness Reliability Standard EOP-012-1 in 2022, under Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination. The purpose of this project was to address standards-related recommendations from the Federal Energy Regulatory Commission (FERC)/NERC/Regional Entity staff review of operations during the February 2021 Winter Storm Uri event.

NERC developed Reliability Standard EOP-012-2 in 2023-2024 to address Commission directives from the February 2023 order approving Reliability Standards EOP-012-1 and EOP-011-3.[1] In the February 2023 Order, the Commission directed that NERC revise EOP-012-1 to clarify the applicability of the standard's requirements for generator cold weather preparedness, further define the circumstances under which a Generator Owner may declare that constraints preclude them from implementing one or more corrective actions to address freezing issues, and to shorten the implementation timeline so cold weather reliability risks would be addressed more quickly.

On June 27, 2024, FERC issued an order approving Reliability Standard EOP-012-2.[2] While finding Reliability Standard EOP-012-2 represented an improvement over the prior version and addressed many of its concerns, FERC found the standard requires further improvement to address certain concerns remaining from its February 2023 order. FERC therefore directed NERC to revise the standard in five areas and to submit a revised standard within nine (9) months of the date of the order, or by March 27, 2025.

[1] *N. Am. Elec. Reliability Corp.*, 182 ¶ 61,094 (2023) ("February 2023 Order").

[2] *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61, 204 (2024) ("June 2024 Order").

Questions

1. In paragraph 47 of the June 2024 Order, FERC directed NERC to revise EOP-012-2 and/or the definition of Generator Cold Weather Constraint to "ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them." FERC provided several examples of how NERC may meet directives in this paragraph and explained that NERC may address these concerns in an equally efficient and effective manner, provided NERC explains how it addresses FERC's concerns. FERC further directed NERC to remove references to "cost", "reasonable cost", "unreasonable cost" and "good business practices" and to replace them with clear and auditable criteria.

   Proposed EOP-012-3 would revise the definition of Generator Cold Weather Constraint and provide a list in Attachment 1 to the standard of situations which would comprise "known" generator constraints, as well as a list of situations which may constitute constraints, depending on the facts and circumstances. In developing this list, the drafting team considered remarks from the November 2024 technical conference and industry comments on prior drafts.

   Do you agree that the proposed revisions to the definition of Generator Cold Weather Constraint and addition of Attachment 1 address the FERC directives in paragraph 47? Please provide any additional comments to consider. If you do not agree, please provide your language change suggestions.
   ☐ Yes
   ☐ No

   Comments:

2. In paragraph 54 of the June 2024 Order, FERC directed NERC to modify EOP-012-2 "so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner."

   To address this directive, proposed EOP-012-3 would require each Generator Owner that declares a constraint to submit it to the CEA for validation (Requirement R8 Part 8.1). Constraints shall be submitted within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable (for new units this time is within 15 days of entering commercial operation). The process for ERO review is addressed separately in an ERO process document.

   Do you agree that the modifications in Requirement R8 are responsive to the FERC directive in paragraph 54? If you do not agree, please provide your language change suggestions.

☐ Yes
☐ No

Comments:

3. In paragraph 68 of the June 2024 Order, FERC directed NERC to modify Requirement R7 of EOP-012-2 "to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event". FERC provided an example for how to address this directive, such as to require shorter timeframes for those units that have experienced issues and allow longer timeframes to address similar potential issues across a fleet for those units that have not experienced issues.

   In proposed EOP-012-3, requirements for Corrective Action Plans for Generator Cold Weather Reliability Events are combined in Requirement R6. Requirement R6 now includes timeframes for CAP implementation for the unit that experiences the Generator Cold Weather Event (before the next winter season), timeframes for reviewing similar units for the same issue (12 months from the event) and timeframes for implementing CAPs on similar units that were determined to be susceptible to the identified freezing issues (24 months from the review, or 36 months from the event). In developing these modifications, feedback from previous postings of the EOP-012-3 standard were considered.

   Do you agree that the modifications in Requirement R6 are responsive to the FERC directive in paragraph 68? If you do not agree, please provide your language change suggestions.
   ☐ Yes
   ☐ No

   Comments:

4. In paragraph 70 of the June 2024 Order, FERC directed NERC "to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC." In paragraph 3 of the June 2024 Order, FERC stated that NERC should "ensure that the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension."

   In proposed EOP-012-3, Requirement R6 Part 6.4 and Requirement R7 Part 7.2 were added to require any Generator Owner seeking to extend a Corrective Action Plan (CAP) implementation deadline beyond the maximum implementation timeframe, to seek pre-approval of the extension by the CEA. The standard specifies the information that must be included in any submission to

allow for this review, including an explanation of the circumstances causing the delay and why those circumstances are beyond the control of the GO, revisions to the CAP in the interim, and an updated timetable for completion.

The drafting team determined that any entities with a need could request information on operating limitations – temporary or otherwise - under the data specification standards (TOP-003, IRO-010), or through other mechanisms for obtaining up-to-date information on the status and availability of generators, and determined to not include a separate requirement for such notifications in EOP-012-3.

Do you agree that the modifications in Requirement R6 Part 6.4 and Requirement R7 Part 7.2 are responsive to the FERC directives above? If you do not agree, please provide your language change suggestions.

☐ Yes
☐ No

Comments:

5. Paragraph 72 June 2024 Order, FERC stated: "[W]e…find that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation." FERC directed NERC to develop and submit modifications to Requirement R7, Reliability Standard EOP-012-2 to clarify that any Requirement R7 Corrective Action Plans (CAPs) for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

   To remove the CAP option from new generation entering commercial operation on or after October 1, 2027, which is consistent with the original EOP-012-1 standard. The drafting team chose to allow a limited CAP option for certain generators whose design criteria were finalized prior to the first version of the EOP-012 standard being approved, and that will come into commercial operation during the first winter the more stringent requirements for new generation are in effect (i.e. winter 2027-2028). These units would be allowed the option to enter commercial operation and complete any required CAPs by April 1, 2028.

   To address industry comments on previous drafts, further clarification is made in Requirement R6 as to scope and applicability and to confirm no retroactive applicability is intended, and additional supporting rationale for the selected bookend dates is provided in the Technical Rationale.

   Do you agree that the modifications in EOP-012-3 Requirement R2 are responsive to the FERC directives? If you do not agree, please provide your language change suggestions.

☐ Yes
☐ No

Comments:

6. In paragraph 76 of the June 2024 Order, FERC directs NERC to remove ambiguities in the Corrective Action Plan implementation plan timelines. As an example, FERC cites the timelines for new, compared to existing, freeze protection measures.

   Requirement R7 was revised to clarify that actions to address issues with existing measures must be completed within 24 months, regardless of any longer timeframes for new measures. Requirements for Corrective Action Plans for Generator Cold Weather Reliability Events are discussed in further detail above. Do you agree that the edits are responsive to the FERC directive in paragraph 76? If you do not agree, please provide your language change suggestions.
   ☐ Yes
   ☐ No

   Comments:

7. In paragraph 94 of the June 2024 Order, FERC directs NERC "to develop and submit modifications to Requirement R8, Part 8.1 of proposed Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations" (i.e. more frequent than every five years) "to verify that the declaration remains valid".

   In proposed EOP-012-3, new Requirement 9 was created to require a review of each constraint at least once every 36 calendar months. In establishing this timeframe, the drafting team considered feedback provided on appropriate periodicities and sought to balance the burdens of more frequent reviews with the benefit to reliability of implementing new technologies as they become available. Do you agree that the modifications reflected in new Requirement R9 are responsive to the FERC Directives? If you do not agree, please provide your language change suggestions.
   ☐ Yes
   ☐ No

   Comments:

8. Under Section 321.5.1 of the NERC Rules of Procedure, the Board of Trustees is to consider whether any proposed standard developed under that section is practical, technically sound, technically feasible, cost-justified and serves the best interests of reliability of the Bulk Power System, among other things. Considering the FERC directives provided above, please provide any other comments you wish the Board of Trustees to consider in whether to adopt proposed Reliability Standard EOP-012-3.

Comments:

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Violation Risk Factor and Violation Severity Level Justifications

Project 2024-03 Revisions to EOP-012-2

This document provides the drafting team's (DT's) justification for assignment of violation risk factors (VRFs) and violation severity levels (VSLs) for each requirement in EOP-012-3. Each requirement is assigned a VRF and a VSL. These elements support the determination of an initial value range for the Base Penalty Amount regarding violations of requirements in FERC-approved Reliability Standards, as defined in the Electric Reliability Organizations (ERO) Sanction Guidelines. The DT applied the following NERC criteria and FERC Guidelines when developing the VRFs and VSLs for the requirements.

NERC Criteria for Violation Risk Factors

High Risk Requirement

A requirement that, if violated, could directly cause or contribute to Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

Medium Risk Requirement

A requirement that, if violated, could directly affect the electrical state or the capability of the Bulk Electric System, or the ability to effectively monitor and control the Bulk Electric System. However, violation of a medium risk requirement is unlikely to lead to Bulk Electric System instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor, control, or restore the Bulk Electric System. However, violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to Bulk Electric System instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

Lower Risk Requirement
A requirement that is administrative in nature and a requirement that, if violated, would not be expected to adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor and control the Bulk Electric System; or, a requirement that is administrative in nature and a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor, control, or restore the Bulk Electric System.

FERC Guidelines for Violation Risk Factors

Guideline (1) – Consistency with the Conclusions of the Final Blackout Report

FERC seeks to ensure that VRFs assigned to Requirements of Reliability Standards in these identified areas appropriately reflect their historical critical impact on the reliability of the Bulk-Power System. In the VSL Order, FERC listed critical areas (from the Final Blackout Report) where violations could severely affect the reliability of the Bulk-Power System:

- Emergency operations
- Vegetation management
- Operator personnel training
- Protection systems and their coordination
- Operating tools and backup facilities
- Reactive power and voltage control
- System modeling and data exchange
- Communication protocol and facilities
- Requirements to determine equipment ratings
- Synchronized data recorders
- Clearer criteria for operationally critical facilities
- Appropriate use of transmission loading relief.

Guideline (2) – Consistency within a Reliability Standard
FERC expects a rational connection between the sub-Requirement VRF assignments and the main Requirement VRF assignment.

Guideline (3) – Consistency among Reliability Standards
FERC expects the assignment of VRFs corresponding to Requirements that address similar reliability goals in different Reliability Standards would be treated comparably.

Guideline (4) – Consistency with NERC's Definition of the Violation Risk Factor Level
Guideline (4) was developed to evaluate whether the assignment of a particular VRF level conforms to NERC's definition of that risk level.

Guideline (5) – Treatment of Requirements that Co-mingle More Than One Obligation
Where a single Requirement co-mingles a higher risk reliability objective and a lesser risk reliability objective, the VRF assignment for such Requirements must not be watered down to reflect the lower risk level associated with the less important objective of the Reliability Standard.

NERC Criteria for Violation Severity Levels

VSLs define the degree to which compliance with a requirement was not achieved. Each requirement must have at least one VSL. While it is preferable to have four VSLs for each requirement, some requirements do not have multiple "degrees" of noncompliant performance and may have only one, two, or three VSLs.

VSLs should be based on NERC's overarching criteria shown in the table below:

Lower VSL	Moderate VSL	High VSL	Severe VSL
The performance or product measured almost meets the full intent of the requirement.	The performance or product measured meets the majority of the intent of the requirement.	The performance or product measured does not meet the majority of the intent of the requirement, but does meet some of the intent.	The performance or product measured does not substantively meet the intent of the requirement.

FERC Order of Violation Severity Levels

The FERC VSL guidelines are presented below, followed by an analysis of whether the VSLs proposed for each requirement in the standard meet the FERC Guidelines for assessing VSLs:

Guideline (1) – Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance

Compare the VSLs to any prior levels of non-compliance and avoid significant changes that may encourage a lower level of compliance than was required when levels of non-compliance were used.

Guideline (2) – Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties

A violation of a "binary" type requirement must be a "Severe" VSL.
Do not use ambiguous terms such as "minor" and "significant" to describe noncompliant performance.

Guideline (3) – Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement

VSLs should not expand on what is required in the requirement.

Guideline (4) – Violation Severity Level Assignment Should Be Based on a Single Violation, Not on a Cumulative Number of Violations

Unless otherwise stated in the requirement, each instance of non-compliance with a requirement is a separate violation. Section 4 of the Sanction Guidelines states that assessing penalties on a per violation per day basis is the "default" for penalty calculations.

VRF Justification for EOP-012-3, Requirement R1

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R1			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.

VSL Justifications for EOP-012-3, Requirement R1	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	There is a clarifying word change from “and” to “or” in all the VSL levels which did not have the unintended consequence of lowering the current level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R2

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R2			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units. units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not complete a Corrective Action Plan or declare a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.

VSL Justifications for EOP-012-3, Requirement R2	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	This requirement was modified to capture the difference for generating units for which the Generator Owner first contractually committed to design criteria relevant to this Requirement on or before/after June 29, 2023. The VSL was modified to add Generator Cold Weather Constraint and did not have the unintended consequence of lowering the current level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R3

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSL Justification for EOP-012-3, Requirement R3

The Drafting Team made non-substantial changes to this Requirement. The VSL did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VRF Justification for EOP-012-3, Requirement R4

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R4			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner implemented a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable parts within Requirement R4.	The Generator Owner maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.

VSL Justifications for EOP-012-3, Requirement R4	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The clarifying change in the High VSL to remove "had and" to align with the requirement language which did not have the unintended consequence of lowering the current level of compliance. There are no changes to other levels of the VSLs.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R5

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R5			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as described in Requirement R5 to the greater of: • one applicable personnel for a single generating unit; or • 5% or less of its total applicable personnel.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as described in Requirement R5 to the greater of: • two applicable personnel for a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as described in Requirement R5 to the greater of: • three applicable personnel for a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as described in Requirement R5 to the greater of: • four or more applicable personnel for a single generating unit; or • more than 15% of its total applicable personnel.

VSL Justifications for EOP-012-3, Requirement R5	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	There is a word change from “at” to “for” in reference to personnel supporting generating units in all the VSL which did not have the unintended consequence of lowering the current level of compliance. This edit clarifies that individuals needing unit-specific training may support many plant locations and not be specifically assigned at one plant. There are no changes to other levels of the VSLs.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R6

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R6			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 12 but fewer than 15 calendar months after the Generator Cold Weather Reliability Event.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 15 but fewer than 18 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirement R6, but it failed to contain one of the elements in Requirement R6, Part 6.3.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 18 but fewer than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirements R6, but it failed to contain two of the elements in Requirement R6, Part 6.3. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable), but it did not include one of the required elements.	The Generator Owner failed to develop a Corrective Action Plan where required under Requirement R6. OR The Generator Owner developed a Corrective Action Plan where required under Requirement R6, but failed to implement it. OR The Generator Owner failed to conduct a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, or the Generator Owner conducted the review, but it was conducted more than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan, but failed to contain

			three or more of the elements in Requirement R6, Part 6.3. OR The Generator Owner exceeded the timetables specified for completion in Requirement R6, Part 6.3.5, but did not submit a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable). OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.4 (if applicable), but it did not include two or more of the elements in Requirement R6, Part 6.4.

VSL Justifications for EOP-012-3, Requirement R6	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	This requirement was modified to ensure that there is a process in place when developing and implementing Corrective Action Plans as well timelines on when Corrective Action Plans should be complete. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R7

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R7			
Lower	**Moderate**	**High**	**Severe**
N/A	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include a description of updates to the cold weather preparedness plan and identification of operating limits as required in Requirement R7, Parts 7.1.3 and 7.1.4.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include one of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include one of the required elements.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include two or more of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include two or more of the required elements. OR The Generator Owner failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable). OR

			The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) in accordance with Requirement R7 Part 7.3. OR The Generator Owner failed to complete corrective action(s) described in the Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) that preclude the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.

VSL Justifications for EOP-012-3, Requirement R7	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	This requirement was modified to ensure that each Generator Owner shall have dated evidence that demonstrates it implemented each Corrective Action Plan, including updating actions or timetables, or has explained in a declaration why corrective actions are not being implemented in accordance with Requirement R7. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R8

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R8			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner declared a Generator Cold Weather Constraint and submitted it to the Compliance Enforcement Authority but it did not do so within the timeframe provided in Requirement R8 Part 8.1.	The Generator Owner declared a Generator Cold Weather Constraint, but failed to update its operating limitations as required under Requirement R8, Part 8.2 (if applicable).	The Generator Owner declared a Cold Weather Constraint, but failed to update its Corrective Action Plan following a determination by the Compliance Enforcement Authority that the constraint is invalid in accordance with Requirement R8 Part 8.3 (as applicable). OR The Generator Owner failed to document and provide the required notice to the CEA under Requirement R8 Part 8.4 (if applicable).	The Generator Owner declared a Generator Cold Weather Constraint but failed to submit it to the Compliance Enforcement Authority. OR The Generator Owner failed to implement freeze protection measures to provide the necessary capability in accordance with Requirement R8 Part 8.3.

VSL Justifications for EOP-012-3, Requirement R8	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The Drafting Team added Lower VSL and Moderate VSL to enforce that the Generator Owner should submit a Generator Cold Weather Constraint in accordance with Requirement R8, Part 8.1 within the specified timeframe and must comply with Requirement R8, Parts 8.2 through 8.3. An additional level in the high VSL was added to cover new language in Requirement R8 Part 8.4 that was added to the standard covering the scenario that would allow a Generator Owner to document a new Generator Cold Weather Constraint that under an existing Generator Cold Weather Constraint that was previously validated and provide notice to the Compliance Enforcement Authority. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R9

VRF Justifications for EOP-012-3, Requirement R9	
Proposed VRF	**Lower**
NERC VRF Discussion	A VRF of Lower is appropriate due to the fact that reviewing each Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority at least once every 36 calendar months is administrative in nature. Failure to review the declaration in the timeframe would not under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor, control, or restore the bulk electric system. Therefore, it is consistent with the definition of a Lower VRF.
FERC VRF G1 Discussion Guideline 1- Consistency with Blackout Report	This VRF is consistent with the identified areas from the FERC list of critical areas in the Final Blackout Report.
FERC VRF G2 Discussion Guideline 2- Consistency within a Reliability Standard	This requirement has only a main VRF and no different sub-requirement VRFs.
FERC VRF G3 Discussion Guideline 3- Consistency among Reliability Standards	This VRF is consistent with other VRFs that address similar reliability goals in different Reliability Standards.
FERC VRF G4 Discussion Guideline 4- Consistency with NERC Definitions of VRFs	This VRF is consistent with the definition of a lower VRF requirement per the criteria filed with FERC as part of the ERO's Sanctions Guidelines.
FERC VRF G5 Discussion Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation	This requirement does not mingle a higher risk reliability objective and a lesser risk reliability objective. Therefore, the VRF reflects the risk of the whole requirement.

VSLs for EOP-012-3, Requirement R9			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 36 but fewer than 38 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 38 but fewer than 40 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 40 but fewer than 42 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was performed more than 42 calendar months after CEA validation or after the previous Generator Owner review. OR The Generator Owner failed to review a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9. OR The Generator Owner failed to develop or update a Corrective Action Plan where required by Requirement R9, Part 9.1 (if applicable).

VSL Justifications for EOP-012-3, Requirement R9	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The Drafting Team drafted Requirement R9 to enforce that the Generator Owner review a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid at least once every 36 months. If the constraint is no longer valid, Requirement R9, Part 9.1 requires the Generator Owner to develop or update a Corrective Action Plan pursuant to Requirement R7 within six (6) calendar months. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Directives from FERC June 2024 Order Approving EOP-012-2 and Directing Further Revisions

Project 2024-03 Revisions to EOP-012-2

Summary

This mapping document summarizes how the Project 2024-03 drafting team (DT), and the Standards Committee in carrying out its responsibilities under Section 321 of the NERC Rules of Procedure, considered FERC's directives for further revisions to Reliability Standard EOP-012-2 in its June 27, 2024 approval order[1] when drafting proposed EOP-012-3.

Paragraph 47 – Address Ambiguities Regarding the term Generator Cold Weather Constraint and Criteria

Directive

"Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit to the Commission for approval modifications to proposed Reliability Standard EOP-012-2 that address concerns related to the ambiguity of the newly defined Generator Cold Weather Constraint term and criteria. Specifically, we direct NERC to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective *and* sufficiently detailed so that applicable entities understand what is required of them. One approach to satisfy this directive could be to incorporate into the proposed Reliability Standard a limited and discrete list of circumstances that would qualify as acceptable constraints. We note that NERC's technical rationale document, created by NERC's Standard Drafting Team and included in NERC's filing, includes a list of technical constraints that could serve as a starting point for a list of circumstances that would qualify as acceptable constraints. To the extent that NERC continues to believe that the extent of industry adoption for winterization technologies should be a criterion for declaring a constraint, NERC should clearly explain in its filing how it will assess the extent of such adoption in a way that provides for consistent compliance and enforcement outcomes. Alternatively, NERC could establish a pre-approval process for all Generator Cold Weather Constraint declarations. While a clearly defined list may be preferable, a pre-approval process could be established to ensure entities' declared Generator Cold Weather Constraints are appropriate and can be supported and defended. Further, as

[1] *N. Am. Elec. Reliability Corp.*., 187 FERC ¶ 61,204 (2024) ("June 2024 Order"). In this document, internal citations included within the cited text of the FERC order are omitted.

part of the directive to develop and submit modifications to the Generator Cold Weather Constraint definition of proposed Reliability Standard EOP-012-2, we direct NERC, pursuant to section 215(d)(5) of the FPA, to remove the references to "cost," "reasonable cost," "unreasonable cost," and "good business practices" and replace them with criteria that are objective, unambiguous, and auditable. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
Generator Cold Weather Constraint - Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions. Criteria used to determine a constraint include practices, methods, or technologies which, given the exercise of reasonable judgment in light of the facts known at the time the decision to declare the constraint was made: • Were not broadly implemented at generating units for comparable unit types in regions that	**Generator Cold Weather Constraint** - Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies. **** **R8.** Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: **8.1.** Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows:	Proposed EOP-012-3 removes all of the references to "reasonable cost," "unreasonable cost," "cost," and "good business practices" within the definition of Generator Cold Weather Constraint. The definition of Generator Cold Weather Constraint now refers generally to a condition that would preclude implementing freeze protection measures. Proposed EOP-012-3 adds Attachment 1, referenced in Requirement R8 and R9, to define the criteria by which a valid Generator Cold Weather Constraint may exist. Attachment 1 consists of: 1. Known Generator Cold Weather Constraints, consisting of circumstances which, if present and confirmed as valid by the Compliance Enforcement Authority, would constitute Generator Cold Weather Constraints; and

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
experience similar winter climate conditions to provide reasonable assurance of efficacy; • Could not have been expected to accomplish the desired result; or Could not have been implemented at a reasonable cost consistent with good business practices, reliability, or safety. A cost may be deemed "unreasonable" when implementation of selected freeze protection measure(s) are uneconomical to the extent that they would require prohibitively expensive modifications or significant expenditures on equipment with minimal remaining life. *** **R8.** Each Generator Owner that creates a Generator Cold Weather Constraint declaration shall: **8.1**. Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and **8.2**. Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable.	• For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or • For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable. **8.2.** Update the operating limitations under Requirement R1 Part R1.2 if applicable; **8.3.** If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2; and	2. Case-by-case Determinations of Generator Cold Weather Constraints, consisting of situations which may constitute Generator Cold Weather Constraints, depending on the specific facts and circumstances. Only upon approval by the Compliance Enforcement Authority would these circumstances comprise a valid Generator Cold Weather Constraint under Requirement R8. Attachment 1 provides significant clarity on the conditions or issues that may constitute a valid Generator Cold Weather Constraint. The criteria are intended to be objective, unambiguous, and auditable. The standard retains flexibility to address potentially valid constraints that are not specifically defined in the standard through the Compliance Enforcement Authority review process. Please refer to the Technical Rationale for additional supporting information.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	8.4. Document and provide notice to the CEA, where a generating unit experiences a Generator Cold Weather Reliability Event that is due to the same cause as a previous Generator Cold Weather Reliability Event for which a Generator Cold Weather Constraint was validated for the same or similar generating unit(s). **** **Attachment 1** (criteria for determining the applicability of a Generator Cold Weather Constraint) (*see draft standard*)	

Paragraph 54: Address Concerns Regarding the Need for a Timely Review and Evaluation of Declared Generator Cold Weather Constraints by NERC

Directive

"Accordingly, we again direct NERC, pursuant to section 215(d)(5) of the FPA, to modify proposed Reliability Standard so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner. We also direct NERC to include in its compliance filing, a plan to timely review such declarations to verify compliance with proposed Reliability Standard EOP-012-2 and its successors or obligations in a corrective action plan and take corrective action where necessary. For example, modifying Standard to require the generator owners to provide declarations (or changes to the declarations) to NERC within 45 days. It is up to NERC whether it would like to delegate this task to the relevant Regional Entities. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R8. Each Generator Owner that creates a Generator Cold Weather Constraint declaration shall: **8.1**. Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and **8.2**. Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable.	**R8.** Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: **8.1.** Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows: • For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or	Requirement R8 would require the Generator Owner declaring a Generator Cold Weather Constraint in accordance with Attachment 1 to submit that constraint to its Compliance Enforcement Authority within 45 days of determining that a Generator Cold Weather Constraint is applicable (for new units, this time is within 15 days of entering commercial operation). This requirement helps ensure the timely submission of constraints to the Compliance Enforcement Authority, which may be NERC or the Regional Entity, for review and approval.

Consideration of Directive in EOP-012-3		
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	• For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable. **8.2.** Update the operating limitations under Requirement R1 Part R1.2 if applicable; **8.3.** If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2; and **8.4.** Document and provide notice to the CEA, where a generating unit experiences a Generator Cold Weather Reliability Event that is due to the same cause as a previous Generator Cold Weather Reliability Event for which a Generator Cold Weather Constraint was validated for the same or similar generating unit(s).	Attachment 1 contains a list of known Generator Cold Weather Constraints as well as a list of situations, circumstances, and criteria that may constitute a Generator Cold Weather Constraint for which a Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply to the Compliance Enforcement Authority for approval. If the Generator Cold Weather Constraint is determined to be invalid by the Compliance Enforcement Authority, the Generator Owner must update its Corrective Action Plan and implement according to the standard timelines, beginning from the date of notification. As NERC and the Regional Entities are not users, owners, nor operators of the BPS, provisions for the timeliness of Compliance Enforcement Authority review are not included in EOP-012-3. Additional support and detail for how the Compliance Enforcement Authority will review constraints in a timely manner consistent with the FERC directive is provided in the Generator Cold Weather CAP Extension and Constraint Process.

Consideration of Directive in EOP-012-3		
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	**** **Attachment 1** (criteria for determining the applicability of a Generator Cold Weather Constraint) (*see draft standard*)	

Paragraph 68 - Address Concerns that Existing EOP-012-2 Requirement R7 Allows Too Long for Entities to Implement Corrective Actions for Existing or New Equipment or Freeze Protection Measures for those Generating Units that Experience a Generator Cold Weather Reliability Event

Directive

"Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. Based on compliance with Requirements R2 and R3, those generating units should have already had appropriate freeze protection measures implemented to be capable of operating at the generating units' respective Extreme Cold Weather Temperature. Therefore, we find that a shorter timeframe to implement corrective actions that address existing or new equipment or freeze protection measures is appropriate. For example, to satisfy this directive, NERC could require generator owners to implement corrective actions prior to the next winter season for generating units that experience a Cold Weather Reliability Event and to complete freeze protection measures on similar equipment on all of its fleet within 24 months of becoming aware of the freeze issue. For corrective action plans that involve larger and more complicated implementations, NERC could incorporate a staggered 48-month corrective action plan implementation deadline."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R6. Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed	**R6.** Each Generator Owner shall, when experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop	To address this directive, proposed EOP-012-3 revises Requirement R6 to specify shorter implementation timeframes at generating units experiencing a Generator Cold Weather Event, and removes references to this requirement under Requirement R7, which previously addressed all Corrective Action Plans developed under the EOP-012-2 standard. For Generator Owners experiencing a Generator Cold Weather Event, Corrective Action Plans

Consideration of Directive in EOP-012-3		
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within 150 days or by July 1, whichever is earlier, and contain at a minimum: **6.1.** A summary of the identified cause(s) for the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data; **6.2.** A review of applicability to similar equipment at generating units owned by the Generator Owner; and **6.3.** An identification of operating limitations or impacts to the cold weather preparedness plan that would apply until execution of the corrective action(s) identified in the Corrective Action Plan. **R7**. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, R3, or R6, shall: **7.1**. Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1**. List the action(s) which address(es) existing equipment or freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan; **7.1.2**. List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar months of completing development of the Corrective Action Plan; and	and implement a Corrective Action Plan(s) to address identified issues as follows: **6.1**. The Generator Owner shall develop a Corrective Action Plan for the generating unit that experienced a Generator Cold Weather Reliability Event no later than prior to the first day of the first December following the Generator Cold Weather Reliability Event.[Fn11] **6.2.** The Generator Owner shall conduct a review of the other generating unit(s) in its fleet with the same or similar equipment as the affected generating unit to determine if any of those generating unit(s) are susceptible to the identified freezing issues. If corrective actions are needed, the Generator Owner shall develop or update a Corrective Action Plan to address the other generating unit(s). This review and, if applicable, the development or update of any Corrective Action Plan(s), shall be completed no later than 12 calendar months following the Generator Cold Weather Reliability Event.	must specify implementation of corrective actions at the affected unit (i.e. the one experiencing the event) by no later than the first day of the first December following the event. For events occurring early in the season (i.e. prior to December 1), corrective actions shall be implemented prior to the first day of December following the event (for early season events, this would be December 1 of the next calendar year). The focus of revised EOP-012-3 Requirement R6 is on the timely completion of corrective actions addressing known freezing issues, rather than the timely development of the Corrective Action Plan document itself. However, for clarity, Requirement R6 Part 6.1 specifies that the Corrective Action Plan(s) itself must be developed by no later than the implementation deadline to ensure that identified issues and the corrective actions taken to address them are memorialized. Recognizing that similar units may be subject to similar issues, Generator Owners must perform a review of applicability to similar equipment at their other units. This review must be completed within 12 months of the Generator Cold Weather Reliability Event. Requirement R6 Part 6.3.5.2 would provide that entities must implement any corrective measures within 24 calendar months of completing this review, or

Consideration of Directive in EOP-012-3		
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7.1.3. List the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; **7.2**. Implement the Corrective Action Plan in accordance with the specified timetables in Requirement R7 Part 7.1; **7.3**. Update the Corrective Action Plan action(s) and timetable(s), with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and **7.4**. Document in a declaration, with justification, any Generator Cold Weather Constraint that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.	**6.3.** For each Corrective Action Plan, the Generator Owner shall include at a minimum: **6.3.1.** A summary of the identified cause(s) of the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data; **6.3.2.** A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures; **6.3.3.** An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed; **6.3.4.** A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components	by no later than 36 months following the Generator Cold Weather Reliability Event. In developing these timelines, the drafting team and the Standards Committee considered multiple stakeholder comments suggesting that a 24-month timeline to implement corrective actions measured from the date of the event for similarly affected units would not be practical and may be unduly burdensome. The drafting team and the Standards Committee also considered the difficulties of defining, with specificity, the circumstances that would constitute "larger and more complicated implementations" – which FERC suggested may warrant a longer implementation period than provided in draft EOP-012-3 (e.g. 48 months compared to up to 36 months in EOP-012-3). To address these considerations, EOP-012-3 provides a uniform implementation period that incentivizes entities to understand the extent of condition across their fleets as soon as possible after the event and provides a definitive and reasonably expeditious timeline for completion. To the extent circumstances beyond the control of the Generator Owner prevent implementation within these timeframes, Requirement R6 Part 6.4 provides a process by which the Generator Owner may seek an

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	and their freeze protection measures, if required; and **6.3.5.** A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows **6.3.5.1.** For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event. [Fn12] **6.3.5.2.** For other generating unit(s) owned by the Generator Owner, within 24 calendar months of completing the review required in Part 6.2, or no later than 36 months following the Generator Cold Weather Reliability Event. **6.4** If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances	extension from the Compliance Enforcement Authority. This process is similar to that included in Requirement R7, discussed more fully in the following section. This provision addresses those larger and more complicated implementations for which even an up to 36 months implementation deadline may not be feasible.

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	beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval. The submitted Corrective Action Plan extension request shall include the following: **6.4.1.** An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner; **6.4.2.** Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and **6.4.3.** Updated timetable for implementing the selected actions in Part 6.3.2. **6.5** The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, as applicable.	

Consideration of Directive in EOP-012-3		
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	[Fn11/Fn12]: For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year. **** **R7.** Each Generator Owner that is required to develop a Corrective Action Plan under Requirements R1, R3, or R9 shall develop and implement the Corrective Action Plan in accordance with the following:	

Paragraph 70: Address the Finding that Any Extensions of a Corrective Action Plan Implementation Deadline Beyond the Maximum Implementation Timeframe Provided by the Standard be Pre-Approved by NERC

Directive

"Therefore, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC. This approach is consistent with prior Commission action in Order No. 851 where the Commission directed NERC to require pre-approval for extensions beyond the timelines required in the Reliability Standard. In Order No. 851, the Commission explained that although case-by-case extension determinations may be more uncertain or have associated burdens, the more compelling imperative is that automatic extensions have the potential for abuse by unduly delaying mitigation, and would lead to delayed visibility for NERC."

See also P 3 (summarizing directives): "[W]e direct NERC to:… develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the Standard is pre-approved by NERC and to ensure that the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R6. Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability	**6.4** If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority for	To address this directive, proposed EOP-012-3 adds new Requirement R6, Part 6.4, and Requirement R7 Part 7.2 to require any Generator Owner seeking to extend a Corrective Action Plan implementation deadline beyond the maximum implementation timeframe required by the standard seeks pre-approval of the extension by the Compliance Enforcement Authority. This language is similar to that used in

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Event. The Corrective Action Plan shall be developed within 150 days or by July 1, whichever is earlier, and contain at a minimum: **6.1.** A summary of the identified cause(s) for the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data; **6.2.** A review of applicability to similar equipment at generating units owned by the Generator Owner; and **6.3.** An identification of operating limitations or impacts to the cold weather preparedness plan that would apply until execution of the corrective action(s) identified in the Corrective Action Plan. **** **R7**. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, R3, or R6, shall: **7.1**. Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1**. List the action(s) which address(es) existing equipment or freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan; **7.1.2**. List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar	approval. The submitted Corrective Action Plan extension request shall include the following: **6.4.1.** An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner; **6.4.2.** Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and **6.4.3.** Updated timetable for implementing the selected actions in Part 6.3.2. **** **7.1.** For each Corrective Action Plan, the Generator Owner shall include at a minimum the following: *** **7.1.4.** An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective	the TPL-007 standard, and the ERO Enterprise would follow a similar review process. With respect to that part of Paragraph 3 relating to "ensuring the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension": Under EOP-012-3 Requirement R6 Part 6.3.3, pertaining to units experiencing a Generator Cold Weather Event, the Generator Owner would be required to identify operating limitations that would apply until execution of the Corrective Action Plan. Under EOP-012-3 Requirements R2 and R3, a Corrective Action Plan would be required where the Generator Owner cannot meet the required operational capability for its unit. Requirement R7 Part 7.1 addresses what generators must include in their Corrective Action Plans, including operating limitations that apply until implementation of the corrective actions is completed (Part 7.1.4). The TOP-003 and IRO-010 standards require the Transmission Operator, Balancing Authority, and Reliability Coordinator to maintain data specifications for their real-time and operational

Consideration of Directive in EOP-012-3		
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months of completing development of the Corrective Action Plan; and **7.1.3**. List the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; **7.2**. Implement the Corrective Action Plan in accordance with the specified timetables in Requirement R7 Part 7.1; **7.3**. Update the Corrective Action Plan action(s) and timetable(s), with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and **7.4**. Document in a declaration, with justification, any Generator Cold Weather Constraint that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.	action(s) identified in the Corrective Action Plan is completed. **7.2.** If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R7 Part 7.1 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following: **7.2.1.** An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner; **7.2.2.** Revisions to the selected actions in Parts 7.1, if any, including utilization of operating procedures, if applicable; and **7.2.3.** Updated timetable for implementing the selected actions in Part 7.1.	planning analyses that include provisions for notification of BES generating unit(s) status during local forecasted cold weather to include operating limitations based on capability and availability, among other factors. These standards require the Generator Owner to provide the requested data. Additionally, other mechanisms that reliability entities have for obtaining up-to-date information on the status and availability of generators was discussed during the development process. It was also considered that, under Reliability Standard TOP-002-5 Requirement R8, each Balancing Authority is required to have an extreme cold weather Operating Process that takes into consideration capability and availability concerns, considering generating operating limitations from previous cold weather periods. After considering these standards, it was determined that no additional requirement would be needed to ensure the “generator owner informs relevant registered entities of operating limitations in extreme cold weather” specifically during the period of Corrective Action Plan extension. Operating limitations should be communicated through other mechanisms regardless of whether those

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		operating limitations apply generally, during the time period provided in the Corrective Action Plan for implementation, or the period provided authorized by the CEA for an extension. To the extent a Transmission Operator, Balancing Authority, or Reliability Coordinator would find the additional detail useful, it may request this information as part of its data specifications, and the Generator Owner would be required to provide it. However, a requirement in EOP-012-3 for the Generator Owner to provide this information through a separate mechanism, absent a communicated need, may not provide any reliability benefit.

Paragraph 72: Address the Finding that Generators that are First Commercially Operational on or after October 1, 2027, Should Have Freeze Protection Measures Either Designed into Their Generating Systems, or, if a Corrective Action Plan is Needed, then It Should be Completed by the Time that Such Generating Units Go into Commercial Operation.

Directive

"We thus find that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to clarify that any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R2. Applicable to generating units with a commercial operation date on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), shall: • Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum	**R2.** Applicable to generating units that begin commercial operation on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), shall: **2.1** For generating units for which the Generator Owner first contractually committed to design criteria[fn3] relevant to this Requirement before June 29, 2023[fn] and which enter	To address this directive, proposed EOP-012-3 revises Requirement R2 which pertains to units going into commercial operation after October 1, 2027 to separate requirements for units that are truly "new" and should have more robust capabilities designed in without need for corrective actions, and units that may have already been significantly far along in the design and construction phase and for whom full compliance at the time of entering commercial operation (which may be after the in-service date) would represent a significant hardship. In considering this directive, it was considered that the 2021-07 DT recommended this requirement apply to generation going into

Consideration of Directive in EOP-012-3		
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operational duration for intermittent energy resources if less than twelve (12) continuous hours; or • Develop a Corrective Action Plan(s) to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours.	commercial operation between October 1, 2027 and March 31, 2028: • Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or • Develop, implement, and complete by April 1, 2028, a Corrective Action Plan to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the	service three (3) years after the effective date of EOP-012-1 (i.e., based on October 1, 2024 that date is October 1, 2027). Under EOP-012-1, this requirement for new generation would have become effective April 1, 2028, which would have been after the winter season. Prior EOP-012 drafting teams believed, however, that there needs to be allowances made for units that are far along in the development process, but do not expect to achieve commercial operation prior to October 1, 2027. It was discussed that some plants may take 5 years or more to complete construction and enter commercial operation, with significant investments in design occurring early in the process. After a certain point, changing such designs (if allowed) may subject the entity to significant added costs, delays, or both. While not changing the October 1, 2027 date as the date after which new units must meet the more stringent requirements for new generation, proposed EOP-012-3 has proposed a means to accommodate the units that are thought to be much further along in the process of development, while overall raising the bar for reliability. For units that were designed prior to June 29, 2023, which is when issues raised on rehearing

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	maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or • Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8. **2.2** For generating units for which the Generator Owner first contractually committed to design criteria[fn5] relevant to this Requirement on or after June 29, 2023[fn]: • Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or	in FERC's February 2023 order approving EOP-012-1 were resolved, entities may implement a Corrective Action Plan to meet the more stringent capability requirements applicable to new generation in Requirement R2. It was considered that, prior to this time, there was some uncertainty as to the specific winterization criteria that would be required and by when; thus, these entities may not have accounted for the criteria in their designs. Additionally, based on information shared at the technical conference held on November 12, 2024 changes to technologies take a significant amount of time to become available. Project development among Original Equipment Manufacturers was estimated to normally take approximately five to seven years. It was considered that, with several regions predicted to experience resource adequacy issues in future years, there would be a reliability benefit to allow those units that are likely to be far along in the development phase to enter commercial operation for winter 2027 and complete a Corrective Action Plan by April 1, 2028 that would allow them to meet the more stringent requirements for new generation, rather than delay their availability until such corrective actions are completed.

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	• Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8. [fn4/fn5]: Such commitments would be demonstrated by signed contracts creating a binding legal agreement with respect to the design criteria for the unit.	For units that are or were designed after that point, entities must either meet the requirements or, if meeting the requirements is not possible, declare a Generator Cold Weather Constraint in accordance with Requirement R8. Consistent with the FERC order, no Corrective Action Plan option is available. Such units that need to take actions in order to become compliant must delay their commercial operation date until such actions have been completed. It is not expected that a significant number of units will be eligible for this option, and of those that are eligible, fewer may be expected to utilize it. More precise estimates are difficult to ascertain, however, given the uncertainties associated with construction timelines and completing the measures necessary to enter commercial operation. Additional information and background are available in the Technical Rationale for proposed EOP-012-3.

Paragraph 76: To Address Concerns that EOP-012-2 Requirement R7 has Ambiguities in the Implementation Plan Timelines that Apply to Certain Generator Owners

Directive

"We believe that proposed Reliability Standard EOP-012-2, Requirement R7's corrective action plan implementation deadlines have remaining ambiguities that need to be addressed. As noted above, the Commission has previously expressed similar concerns regarding the vagueness and enforceability of Reliability Standards language. Specifically, we agree with the concerns raised by the ISO/RTO Council that Requirement R7 of proposed Reliability Standard EOP-012-2 does not provide clear direction as to the required corrective action plan implementation timeline that applies to certain generator owners. For example, it is unclear how the corrective action plan implementation timeline would apply if a generator owner had combinations of both existing and new equipment for freeze protection measures. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to address these ambiguities by expanding on Requirement R7.1.1 and 7.1.2 to make it clear which corrective action plan implementation deadline applies to which generator owner."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R7. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, R3, or R6, shall: **7.1**. Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1**. List the action(s) which address(es) existing equipment or freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan; **7.1.2**. List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar	**6.3.5.** A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows **6.3.5.1.** For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.[fn12] **6.3.5.2.** For other generating unit(s) owned by the Generator Owner,	To address this directive, proposed EOP-012-3 includes CAP timelines in Requirement R6 Part 6.3.5 for CAPs developed due to experiencing a Generator Cold Weather Reliability Event which require corrective actions be completed no later than the first day of the first December following the event. For events occurring early in the season (i.e. prior to December 1), corrective actions shall be implemented prior to December 1 of the next calendar year following the event.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
months of completing development of the Corrective Action Plan; and **7.1.3**. List the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures;	within 24 calendar months of completing the review required in Part 6.2, or no later than 36 months following the Generator Cold Weather Reliability Event. **** **R7.** Each Generator Owner that is required to develop a Corrective Action Plan under Requirements R1, R3, or R9 shall develop and implement the Corrective Action Plan in accordance with the following: **7.1.** For each Corrective Action Plan, the Generator Owner shall include at a minimum the following: **7.1.1.** A list of any actions that require new freeze protection measures, with a timetable specifying completion of such measures within 48 calendar months of completing development of the Corrective Action Plan; **7.1.2.** A list of any actions that remedy issues with existing freeze protection measures with a timetable specifying completion of such measures within 24 calendar months of	Recognizing that similar units may be subject to similar issues, Generator Owners must perform a review of applicability to similar equipment at their other units. Revised Requirement R6 Part 6.3.5.2 would allow the entity to perform this review within 12 calendar months and implement any corrective measures within 24 calendar months of completing this review, or no later than 36 months following the Generator Cold Weather Reliability Event. These revisions provide enhanced specificity regarding the timelines for completing corrective actions in a Corrective Action Plan, with more urgent deadlines to address issues that have been known to cause freezing issues. Additionally in Requirement R7 Part 7.1.2 the DT added “regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures” to clarify that actions to address issues with existing freeze protection measures must still be completed within 24 months, even if separate actions to implement new freeze protection measures have a longer timeframe. Additional information regarding what may be considered a “new” freeze protection measure and what may be considered an “existing” freeze protection measure is provided in the

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	completing development of the Corrective Action Plan (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures);	Technical Rationale. In summary, if there is a failure of a freeze protection measure (e.g., heat trace) and that freeze protection measure is replaced with the same/similar/commonly used technology, that would be considered "existing". Similarly, replacing a component of an existing system would be considered addressing issues with "existing" freeze protection measures. Examples of "new" freeze protection measures may include new permanent structures or new technologies not already applied. It is thought that the industry generally understands the distinction between "new" and "existing" in this context, but the additional support in the Technical Rationale should further clarify the matter consistent with the FERC directive and help ensure that the longer timeframes are only used where appropriate to the scope of work required for implementation.

Paragraph 94: To address the concern that Generator Cold Weather Constraint Declarations Should be Reviewed More Frequently than Once Every Five Years to Ensure the Constraint Remains Valid

Directive

"We agree with the ISO/RTO Council that the proposed five-year review period for the declared Generator Cold Weather Constraints in Requirement R8.1 could delay the identification and adoption of new freeze protection measures and does not represent the current pace of technological advancements. We acknowledge that a more frequent review does impose some additional administrative burden to the generator owner to review the technological advancements that hindered its ability to winterize; nonetheless, a lengthy period between a Generator Cold Weather Constraint declaration review by the generator owner offers little incentive to timely adopt new freeze protection technologies. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R8, Part 8.1 of proposed Reliability Standard EOP 012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations to verify that the declaration remains valid. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R8. Each Generator Owner that creates a Generator Cold Weather Constraint declaration shall: **8.1**. Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and **8.2**. Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable.	**R9.** The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. **9.1** If a Generator Cold Weather Constraint is determined to be no longer valid, then within six (6) calendar months of such determination, the Generator Owner shall develop or update a Corrective	To address this directive, proposed EOP-012-3 adds Requirement R9 to require review of all validated Generator Cold Weather Constraints at least once every 36 calendar months to ensure the constraint remains valid. Language regarding reviews "as needed when a change of status" occurs was removed due to the more frequent periodicity. This timeline was based on consideration of stakeholder comments regarding the optimal timeframe for such reviews, considering the pace that new technologies are brought to market. By shortening from five calendar years, the 36

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	Action Plan pursuant to Requirement R7. **** **Attachment 1** (criteria for determining the applicability of a Generator Cold Weather Constraint) (*see draft standard*)	calendar month timeline provides a reasonable approach to meeting the Commission's directives without creating undue administrative burden to periodically monitor if Generator Cold Weather Constraints remain valid or if new technologies have become available that effectively obviate the originally validated constraint. Part 9.1 clarifies the Generator Owner's obligations in the event the constraint is determined to be no longer valid. For example, a new freeze protection technology is developed that would address the issue, or circumstances change such that the implementation of an existing measure would no longer cause the plant to retire prematurely. The Generator Owner must then develop or update an existing Corrective Action Plan to specify implementation of the freeze protection measures according to the timelines provided in Requirement R7, along with the other required elements. This provision helps ensure that entities are taking timely action, if circumstances change, such that a constraint is no longer appropriate under the standard.

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EOP-012-3

Generator Cold Weather CAP Extension and Constraint Process

Background

This Electric Reliability Organization (ERO) Generator Cold Weather Corrective Action Plan (CAP) Extension and Constraint Process document addresses how ERO Enterprise staff will review generator cold weather CAP extensions and Constraints developed under Reliability Standard EOP-012-3 Requirements and Attachment 1. The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.

NERC Compliance Assurance & Certification will maintain this document under existing ERO Enterprise processes. This document will be reviewed and updated by NERC Compliance Assurance & Certification, as needed. The steps outlined here will help to ensure a timely, structured, and consistent approach to CAP extension request and Generator Cold Weather Constraint submittals and processing.

CAP Extension Request Review Process

Process Overview

If a registered entity has determined that a Corrective Action Plan (CAP) developed in accordance with EOP-012-3 Requirements R6 or R7 cannot meet the timetable provided per R6 Part 6.3 or R7 Part 7.1, then the entity will submit an extension request to the ERO Enterprise for approval no less than 60 calendar days prior to the original required CAP completion date[1]. It is the Generator Owner's obligation and responsibility to provide clear documentation with the extension request in a timeframe that allows the ERO Enterprise to process the request effectively.

The entity will work with the Regional Entity designated as its Compliance Enforcement Authority (CEA) as outlined in this process. The entity submitting the extension request will be referred to as the 'submitting entity' and may represent only itself or multiple registered entities who have developed a joint extension request[2]. The submitting entity is responsible for ensuring all registered entities who are jointly submitting the extension request are listed in the requested information below and for distributing any communications from its CEA to the other entities that are part of the joint extension request. If a joint extension request is submitted for multiple registered entities who have different Regional Entities designated as the CEA, the submitting entity's CEA will perform the steps outlined in this process and will be responsible for coordinating with the Regional Entity(ies) that are the designated CEA for the additional entities party to the joint extension request.

[1] The ERO Enterprise is aware that in certain situations the submittal timeframes may not be met due to circumstances beyond the control of a Generator Owner. The ERO Enterprise will prioritize efforts to help ensure timely processing of extension requests as these circumstances arise.

[2] As a single Corrective Action Plan may be developed for multiple sites and multiple entities, a Corrective Action Plan extension request may be done in a similar manner.

For entities in Coordinated Oversight, the CEA for this process is the Lead Regional Entity (LRE). The LRE will coordinate with the Affected Regional Entity(ies) (ARE) and the AREs may participate in the joint review as well.

Step 1 – Registered Entity Submittal

If an entity determines that it cannot meet the required timetable for completing a CAP, the submitting entity will submit the requisite data to their CEA through Align and the Secure Evidence Locker (SEL) or other process tools as directed by the CEA.

Entities are encouraged to submit the extension request as soon as they are aware they will not meet the CAP completion date, but no later than 60 calendar days before the original required completion date. The 60-day timeframe provides the submitting entity and the CEA sufficient time to have discussions, as needed, prior to the required completion date. It is the submitting entity's responsibility to ensure that all information detailed in EOP-012-3 Part 6.4 or Part 7.2 and requested in Align is provided in the entity's extension request to facilitate the review.

Step 2 – ERO Enterprise Review

The CEA will acknowledge receipt of the submission in writing (either through Align or email) within 15 calendar days and verify that all information detailed in EOP-012-3 Part 6.4 or Part 7.2 is provided in the submittal. The CEA will work with the submitting entity to provide any missing information. The CEA will notify NERC of the extension request submittal and provide all associated information when acknowledging receipt of the submission.

The CEA will then perform a review of (1) the circumstances beyond the control of the entity preventing implementation of the CAP within the identified timetable; (2) the revisions to the selected actions in the CAP; and (3) the updated timetable for implementing the selected actions[3]. Any additional information requested to support the extension request review will be coordinated with the submitting entity by the CEA. The CEA will complete the review within 45 calendar days of acknowledgement or provide notification to the submitting entity that they are extending the time needed for review.

Examples of circumstances beyond the control of the responsible entity include, but are not limited to:

- Delays resulting from regulatory/legal processes, such as permitting.
- Delays resulting from stakeholder processes required by tariff.
- Delays resulting from equipment lead times; or
- Delays resulting from unit outages being denied.

Due diligence (i.e., reasonable steps taken) in ordering equipment, obtaining permits, scheduling outages, etc., will be considered as part of the determination of whether a particular set of facts constitute circumstances beyond the control of the entity.

[3] NERC may choose to participate in any review at its own discretion or at the request of the CEA.

Step 3 – Registered Entity Notification

The CEA will communicate the approval or denial of the extension request or continuation of the time needed to review the extension request in writing to the submitting entity including the rationale for the determination. For any continuation of the review, the CEA will also provide the submitting entity with a revised timeline for when the determination will be provided. If an extension request is denied, the selected actions in the CAP need to be completed in accordance with the original timetables.

If a CAP extension request was denied, the submitting entity may request, within five (5) calendar days of denial, a joint NERC and CEA review of the denial. The joint review should take no longer than 10 calendar days (subject to the information and resources available.) NERC and the CEA will evaluate the information provided and the submitting entity will be notified of the determination.

Step 4 – Reporting to NERC

Quarterly, the CEA will provide NERC a report that, at a minimum, includes each extension request, whether the request was approved or denied, and the CEA's rationale for its decision.

Constraint Review Process

Process Overview

If a registered entity has determined that a Generator Cold Weather Constraint, developed in accordance with Reliability Standard EOP-012-3 Attachment 1, exists, the entity will work with the Regional Entity designated as its CEA to submit the Generator Cold Weather Constraint, with supporting documentation, to the CEA for review, evaluation, and validation or approval as outlined in this process.

The entity submitting the Generator Cold Weather Constraint(s) will be referred to as the 'submitting entity' and may represent itself or multiple registered entities under the same ownership with the same Generator Cold Weather Constraint. The submitting entity is responsible for ensuring all registered entities included are listed in the requested information and is for distributing any communications from its CEA to the other entities that are part of the Generator Cold Weather Constraint. If a Generator Cold Weather Constraint is submitted for multiple registered entities under the same ownership who have different Regional Entities designated as the CEA, the submitting entity's CEA will perform the steps outlined in this process and will be responsible for coordinating with the Regional Entity(ies) that are the designated CEA for the additional entities party to the Generator Cold Weather Constraint.

For entities in Coordinated Oversight, the CEA for this process is the Lead Regional Entity (LRE). The LRE will coordinate with the Affected Regional Entity(ies) (ARE) and the AREs may participate in the joint review as well.

Step 1 – Registered Entity Submittal

If an entity determines that it meets the required Generator Cold Weather Constraint language within Attachment 1, the submitting entity will submit the requisite data to their CEA through Align and the Secure Evidence Locker or other process tools as directed by the CEA.

Entities are encouraged to submit the Generator Cold Weather Constraint as soon as they are aware they will meet the Generator Cold Weather Constraint language within Attachment 1 but are required to meet EOP-012-3 Requirement R8[4]. Early submittal is requested to allow the CEA time to review, evaluate, and validate or approve the Generator Cold Weather Constraint.

If an entity determines a Generator Cold Weather Constraint is required for a unit, then subsequently has another unit that requires declaration of the same Generator Cold Weather Constraint (e.g., the same issue occurred at another location with implementing a freeze protection measure) an update to the original Generator Cold Weather Constraint is allowed. Note that supporting information for the other site is needed and the submittal/review timelines (per Requirement R8 and this process) will remain the same for the "new" addition. This will allow a Generator Owner to perform the 36-calendar month review of the Generator Cold Weather Constraint for both instances at the same time.

It is the submitting entity's responsibility to ensure that all information detailed in EOP-012-3 R8 and Attachment 1 is provided in the entity's submittal to facilitate the CEA review. The submitting entity should review language within Attachment 1 and identify, in the submittal, if the Generator Cold Weather Constraint is a known Generator Cold Weather Constraint or a Generator Cold Weather Constraint requiring further review for approval.

Step 2 – ERO Enterprise Review

The CEA will acknowledge receipt of the submission in writing (either through Align or email) within 15 calendar days and verify that all information detailed in EOP-012-3 R8 and Attachment 1 is provided in the submitting entity's submittal. The CEA will work with the submitting entity to provide any missing information. The CEA will notify NERC of the Generator Cold Weather Constraint submittal (either through Align or via email) when acknowledging receipt of the submission.

The CEA will review the Generator Cold Weather Constraint submittal and supporting information[5]. Any additional information requested to support the Generator Cold Weather Constraint review, evaluation, and validation or approval will be coordinated with the submitting entity by the CEA. The CEA will complete the review within 10 calendar days of submittal receipt confirmation for known Generator Cold Weather Constraint and 45 calendar days of submittal receipt confirmation for those Generator Cold Weather

[4] Per EOP-012-3 R8.1, the Generator Owner must submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable for in-service units. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, the Generator Owner must submit the Generator Cold Weather Constraint declaration(s) no later than 15 calendar days after commercial operation.

[5] NERC may choose to participate in any review at its own discretion or at the request of the CEA.

Constraint requiring further review for approval or provide notification to the submitting entity that they are extending the time needed to review[6].

The determination whether to approve the case-by-case Generator Cold Weather Constraint will be based on the specific facts and circumstances provided by the submitting entity that defends and supports the declared constraint under the identified situations in EOP-012-3 Attachment 1.

Step 3 – Registered Entity Notification

The CEA will communicate the validation, approval, or denial of the Generator Cold Weather Constraint or continuation of the time needed to review the Generator Cold Weather Constraint in writing (via Align or email) to the submitting entity including the rationale for the determination. For any continuation of the review, the CEA will also provide the submitting entity with a revised timeline for when the determination will be provided. Denial of a Generator Cold Weather Constraint requires the entity to update its CAPs with corrective actions that will be completed within the timetables in Requirement R6 Part 6.3 or Requirement R7 Part 7.1 to begin from the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid. Communication efforts between the submitting entity and the CEA related to updates of the CAP and timetables resulting from a denial of a Generator Cold Weather Constraint are strongly encouraged.

If a Generator Cold Weather Constraint was denied, the submitting entity may request, within five (5) calendar days of denial, a joint NERC and CEA review of the denial. The joint review should take no longer than 10 calendar days (subject to the information and resources available.) NERC and the CEA will evaluate the information provided and the submitting entity will be notified of the determination.

Step 4 – Reporting to NERC

Quarterly, the CEA will provide NERC a report that, at a minimum, includes each Generator Cold Weather Constraint request received, whether the request was validated, approved, or denied, and the CEA's rationale for its decision.

[6] If a large number of entities submit Generator Cold Weather Constraints at the same time (especially those tied to initial performance expectations as set in the EOP-012-3 Implementation Plan), the ERO Enterprise anticipates additional time will be needed to accommodate these initial reviews.

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Calculating Extreme Cold Weather Temperature

RELIABILITY | RESILIENCE | SECURITY




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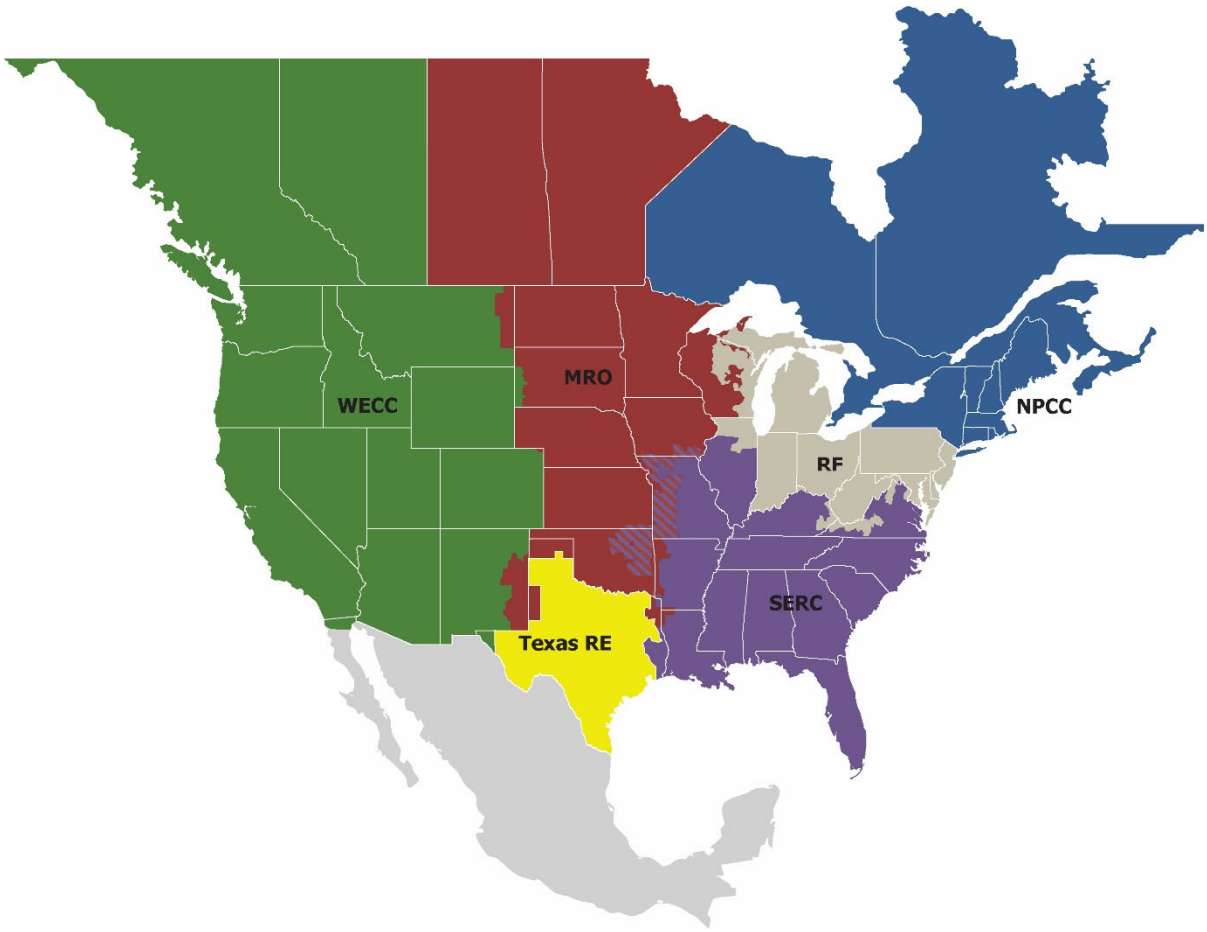
Table of Contents

Preface

Electricity is a key component of the fabric of modern society and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of NERC and the six Regional Entities, is a highly reliable, resilient, and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

Reliability | Resilience | Security
Because nearly 400 million citizens in North America are counting on us

The North American BPS is made up of six Regional Entity boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one Regional Entity while associated Transmission Owners/Operators participate in another.



MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	WECC

Introduction

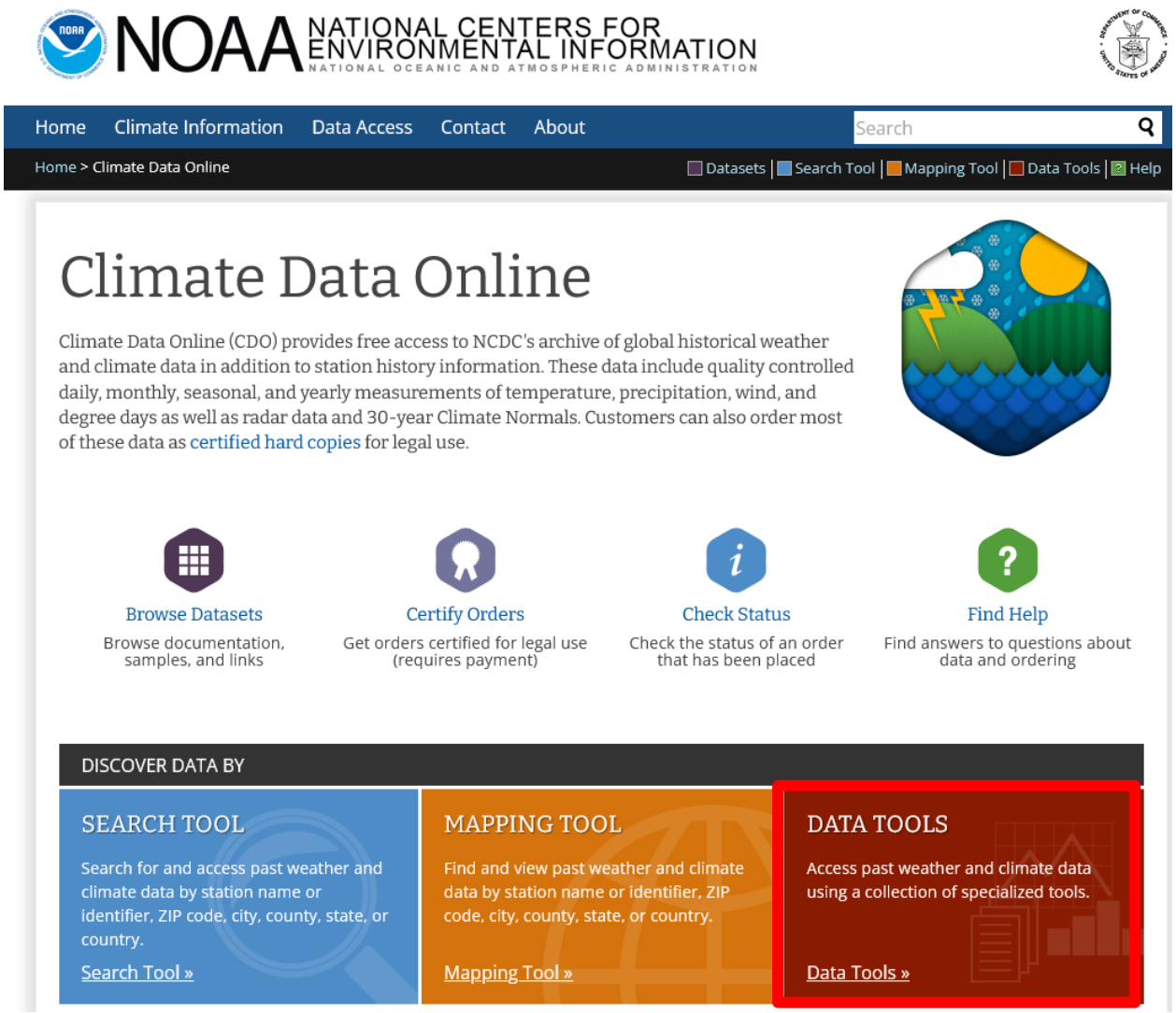
This document demonstrates two methods for acquiring data for a given location and a method of performing the statistical analysis of the data to determine the Extreme Cold Weather Temperature for a given location. These examples are focused on United States and will use data obtained from NOAA's Climate Data Online database and Automated Surface Observing Systems (ASOS). Performance of the statistical analysis with Microsoft Excel is demonstrated as well. The method shown in this document only shows the collection of data and two methods of analyzing this data, both using Microsoft Excel. Note that other data sources may be available for use. Although not addressed here, offshore installations may be able to use National Data Buoy Center (noaa.gov) but data is limited. It is understood that a complete single source data set may not always be available due to a variety of reasons. There may be ways to gather a more complete data set than described below. Document your approach when identifying and addressing suspect data.

Determination of Location's Extreme Cold Weather Temperature

Gathering the Data From NOAA

Navigate to https://www.ncdc.noaa.gov/cdo-web/

1. Select **Data Tools.**



2. Scroll down if necessary and select **Local Climatological Data (LCD).**

Find a Station

Locate weather observing stations using a variety of parameters such as address, ZIP code, date, and data type with filters by observation type

Select a Location

Order data by weather observing stations or by geographic locations using a simplified drill-down interface with data from U.S. and other countries

Search Within a Single Dataset

The following search tools access data from within a specific dataset. Use these tools to view or order data from within each respectiv dataset. Data will be in a more standard format across stations or locations.

Climate Normals

View temperature and precipitation Climate Normals for over 9,800 stations across the United States and a selection of other territories

Daily Weather Records

Access summaries of recent global and U.S. daily weather records with options to view monthly, annual, all-time or selected records

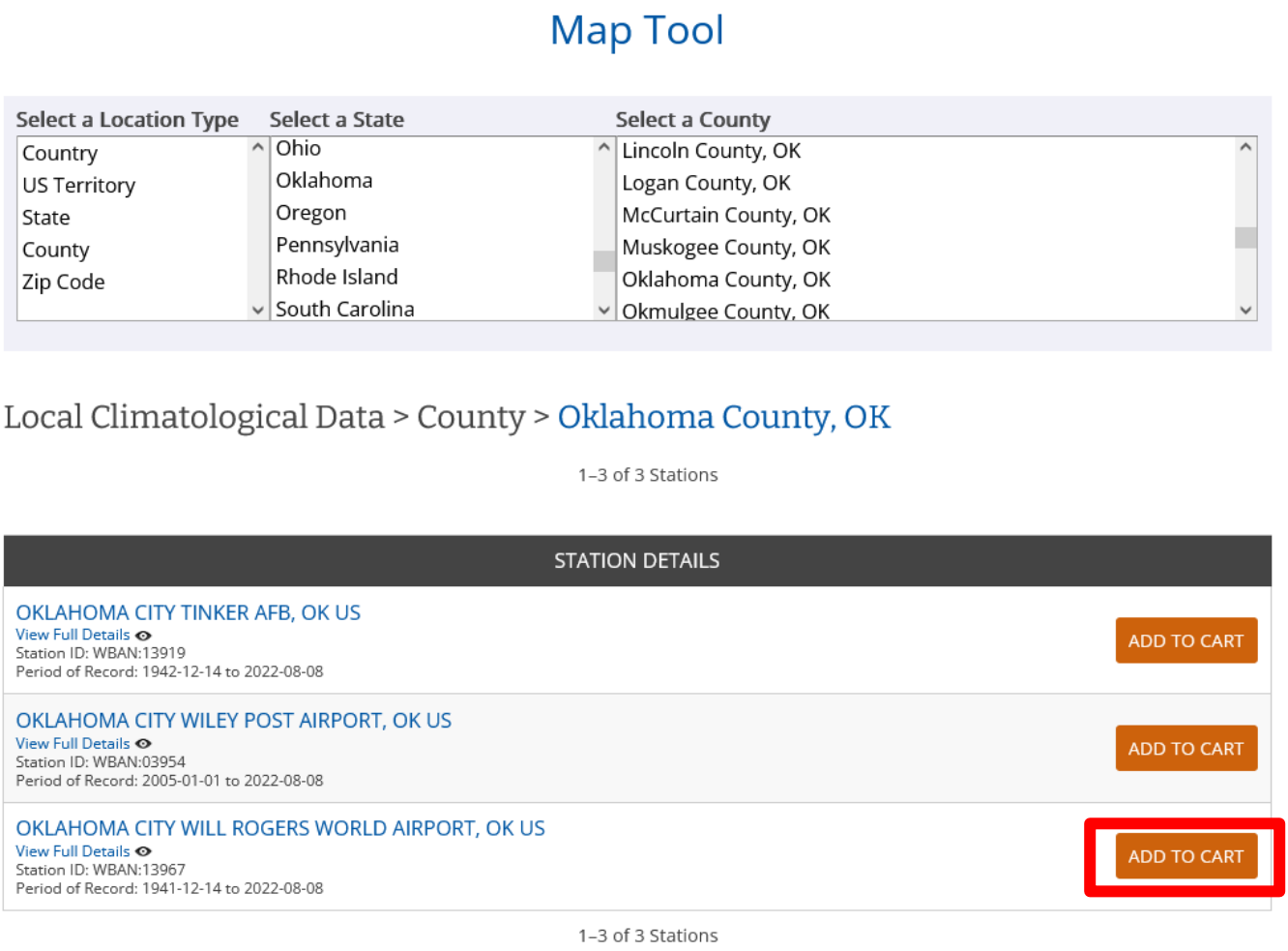
Local Climatological Data (LCD)

View and order hourly, daily, and monthly data from nearly 2400 locations within the U.S., surrounding territories, and other selected areas

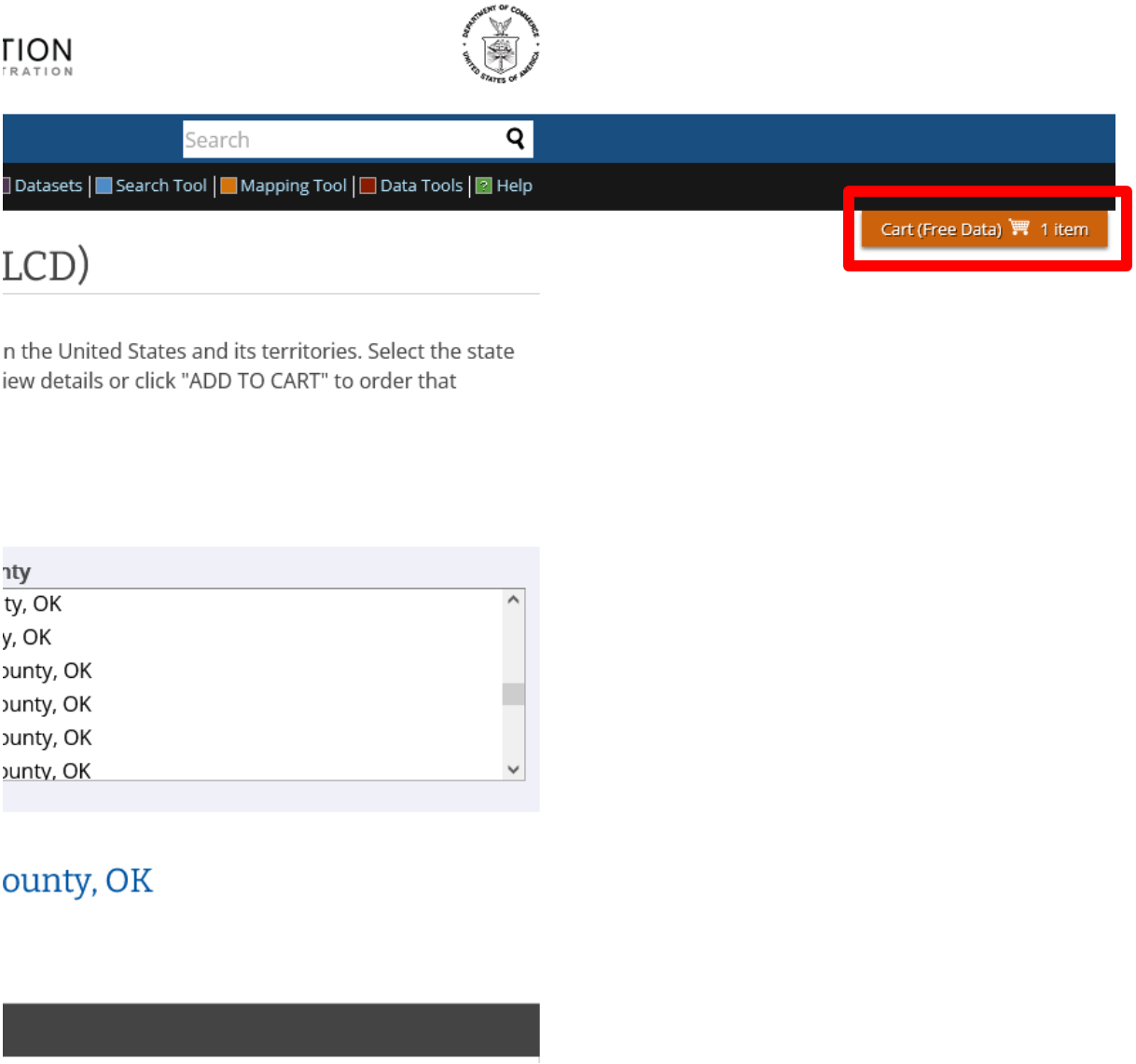
Marine Data

View and order historical marine data which is comprised of ship, buoy, and platform observations from 1662 to present.

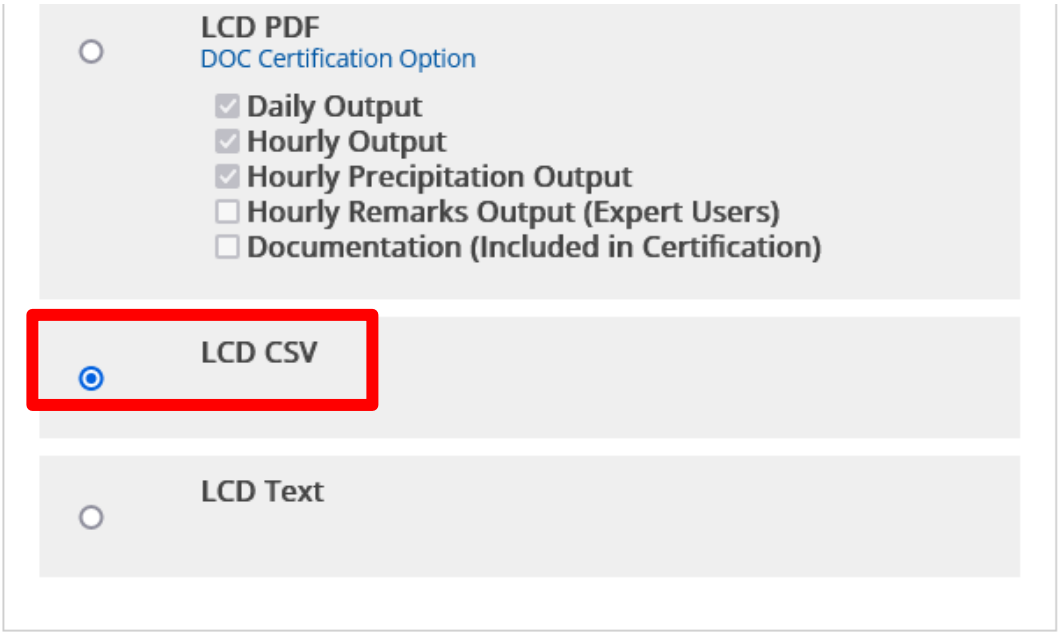
3. Use the selection tool to find a weather station appropriate for your location and click ADD TO CART.

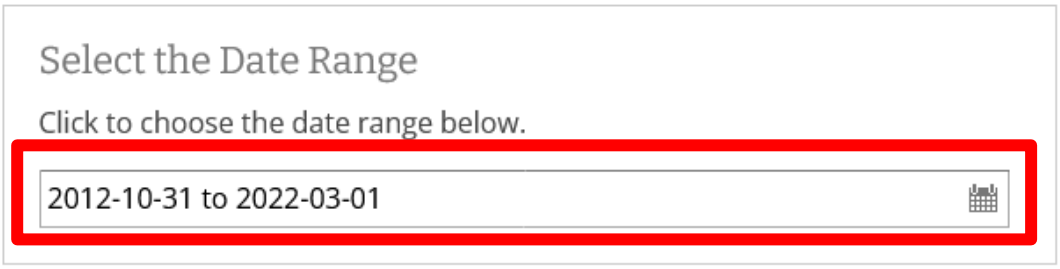


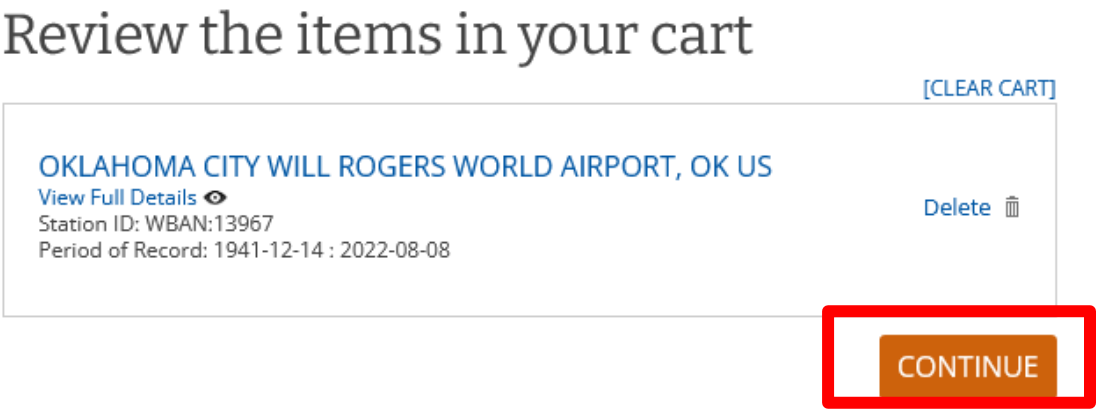
4. Click on the **cart icon** in the upper right-hand portion of the page.



5. Select LCD CSV, your desired date range, and then click continue. (Note: date ranges must be less than 10 years, so this process might have to be repeated several times and multiple files combined into one in order to get all data necessary to perform the analysis to determine the Extreme Cold Weather Temperature)







6. Enter and verify your email address and click **Submit Order.** You will receive an email when your request has been processed and is ready to download.

REQUESTED DATA REVIEW	
Dataset	Local Climatological Data
Order Start Date	2012-10-31 00:00
Order End Date	2022-03-01 23:59
Output Format	LCD CSV
Stations/Locations	OKLAHOMA CITY WILL ROGERS WORLD AIRPORT, OK US (Station ID: WBAN:13967)

Enter email address

Please enter your email address. This is the address to which your data links and information regarding this order will be sent. Please read NOAA's Privacy Policy if you have any concerns.

Email Address

email@address.com

Verify Email Address

email@address.com

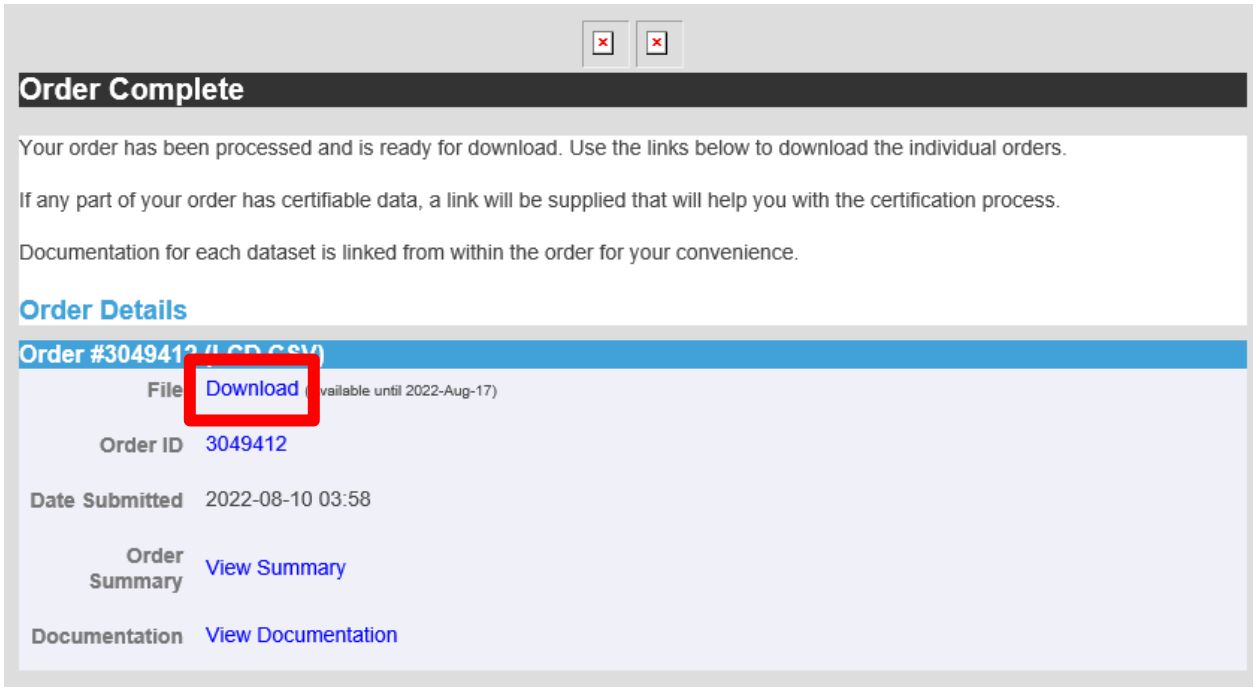
Remember my email address

[Uncheck to forget]

NOAA will not share your email address with anyone. The email address will not be used for any purpose other than communicating the order status.

EDIT ORDER SUBMIT ORDER

7. Click **Download** in the email that you will receive from NOAA to download your dataset.



Analyzing the Data

Option 1

1. Open the .csv file that was downloaded using the previous steps (and combine with other .csv files as necessary to cover the required date range).

2. Add filters to the first row and filter on "Report Type", column C, to only show report type FM-15, this is the standard METAR data.

STATION	DATE	REPORT	SOURCE	AWND	Backup	Backup	Backup	Backup	Backup	Backup	Backup	Backup
72353013967	2012-10-31T00:52:00	FM-15	7									
72353013967	2012-10-31T01:52:00	FM-15	7									
72353013967	2012-10-31T02:52:00	FM-15	7									
72353013967	2012-10-31T03:52:00	FM-15	7									
72353013967	2012-10-31T04:52:00	FM-15	7									
72353013967	2012-10-31T05:52:00	FM-15	7									
72353013967	2012-10-31T06:52:00	FM-15	7									
72353013967	2012-10-31T07:52:00	FM-15	7									
72353013967	2012-10-31T08:52:00	FM-15	7									
72353013967	2012-10-31T09:52:00	FM-15	7									
72353013967	2012-10-31T10:52:00	FM-15	7									
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72353013967	2012-11-01T02:52:00	FM-15	7									
72353013967	2012-11-01T03:52:00	FM-15	7									
72353013967	2012-11-01T04:52:00	FM-15	7									
72353013967	2012-11-01T05:52:00	FM-15	7									

3. Select the Date column, column B, by clicking on the column, scroll over to the Hourly Dry Bulb Temperature column, column AS, and holding down the CTRL key, select that column. Copy and paste both columns into a new sheet named "Clean and Filter".

DATE	HourlyDryBulbTemperature		
2012-10-31T00:52:00	52		
2012-10-31T01:52:00	51		
2012-10-31T02:52:00	50		
2012-10-31T03:52:00	47		
2012-10-31T04:52:00	46		
2012-10-31T05:52:00	46		
2012-10-31T06:52:00	44		
2012-10-31T07:52:00	48		
2012-10-31T08:52:00	52		
2012-10-31T09:52:00	57		
2012-10-31T10:52:00	61		
2012-10-31T11:52:00	65		
2012-10-31T12:52:00	67		
2012-10-31T13:52:00	68		
2012-10-31T14:52:00	71		
2012-10-31T15:52:00	71		
2012-10-31T16:52:00	70		
2012-10-31T17:52:00	66		
2012-10-31T18:52:00	62		
2012-10-31T19:52:00	59		
2012-10-31T20:52:00	54		
2012-10-31T21:52:00	51		
2012-10-31T22:52:00	52		
2012-10-31T23:52:00	52		
2012-11-01T00:52:00	53		

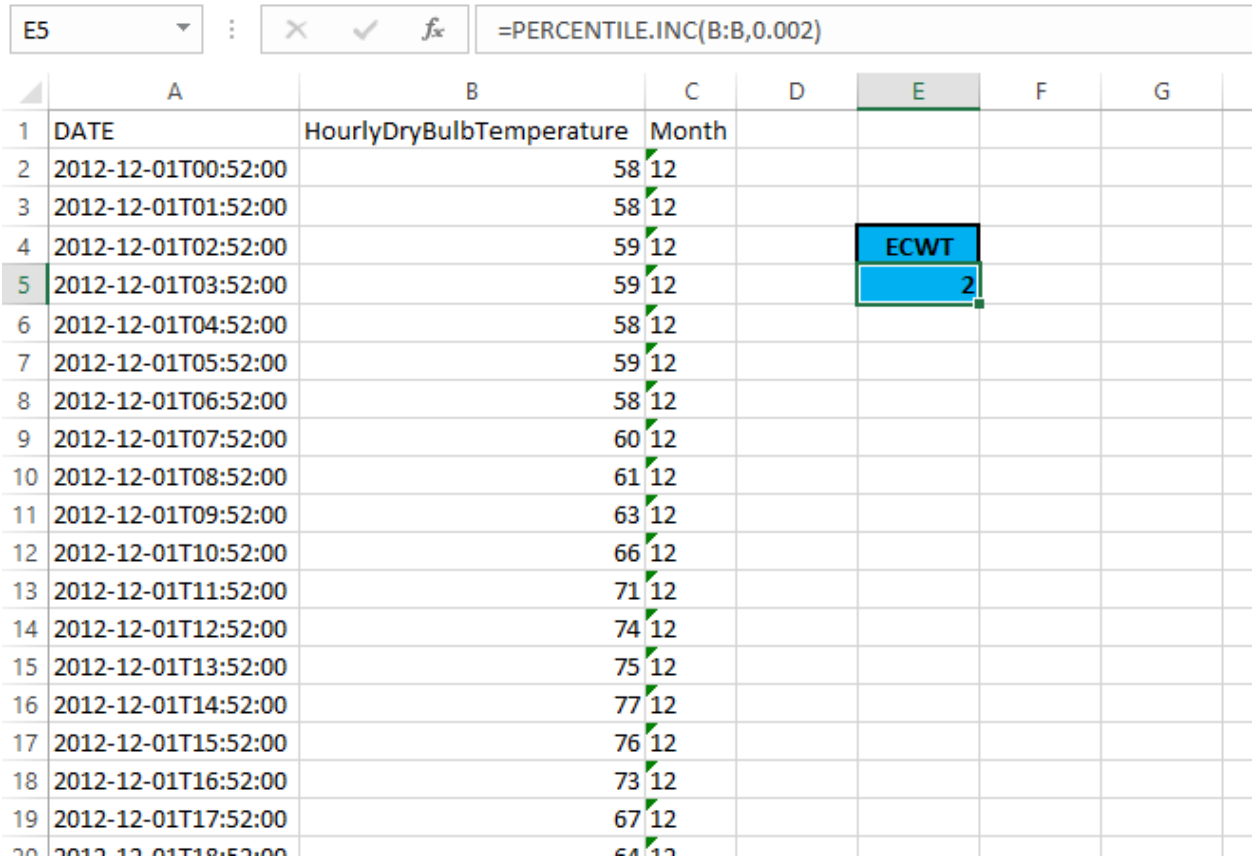
4. Using the data on the "Clean and Filter" sheet, type **Month** in column C1, type the formula "=mid(A2,6,2)" in cell C2, and copy that formula in column C to the last row of the data set. Then Filter month to only show months 1, 2, 12 (January, February, and December).

5. You can then filter by Hourly Dry Bulb Temperature (Column B) to find and address bad data as appropriate. Bad data may consist of corrupt or missing values. It is beneficial to document information about the bad data to support the calculation of ECWT. If there are other sources that are similar to the source selected that has more complete data or the data can be used, consider that option and document accordingly. It is understood that complete single source data sets may not be the norm due to a variety of reasons- technology, maintenance on monitoring devices, failure to record, instrument failure, instrument testing, etc. You may not have the reason for the corrupt or missing data and documenting the raw data and its source is recommended. Now Select, Copy, and Paste the remaining data to a new sheet named ECWT

	A	B	C	D
1	DATE	HourlyDryBulbTemperatur	Month	
747	2012-12-01T00:52:00	58	12	
748	2012-12-01T01:52:00	58	12	
749	2012-12-01T02:52:00	59	12	
750	2012-12-01T03:52:00	59	12	
751	2012-12-01T04:52:00	58	12	
752	2012-12-01T05:52:00	59	12	
753	2012-12-01T06:52:00	58	12	
754	2012-12-01T07:52:00	60	12	
755	2012-12-01T08:52:00	61	12	
756	2012-12-01T09:52:00	63	12	
757	2012-12-01T10:52:00	66	12	
758	2012-12-01T11:52:00	71	12	
759	2012-12-01T12:52:00	74	12	
760	2012-12-01T13:52:00	75	12	
761	2012-12-01T14:52:00	77	12	
762	2012-12-01T15:52:00	76	12	
763	2012-12-01T16:52:00	73	12	
764	2012-12-01T17:52:00	67	12	
765	2012-12-01T18:52:00	64	12	
766	2012-12-01T19:52:00	63	12	
767	2012-12-01T20:52:00	58	12	
768	2012-12-01T21:52:00	61	12	
769	2012-12-01T22:52:00	52	12	
770	2012-12-01T23:52:00	50	12	
771	2012-12-02T00:52:00	48	12	
772	2012-12-02T01:52:00	46	12	
773	2012-12-02T02:52:00	45	12	
774	2012-12-02T03:52:00	43	12	
775	2012-12-02T04:52:00	44	12	
776	2012-12-02T05:52:00	43	12	

6. Using Excel's built in Percentile function, the Extreme Cold Weather Temperature (ECWT) can now be determined. While on the ECWT sheet, in a blank cell use the function "=PERCENTILE.INC()" and select all temperature data in Column B (Hourly Dry Bulb Temperature) on the "ECWT" sheet and use 0.002 for the percentile value. The formula will look similar to this, "=PERCENTILE.INC(B:B,0.002)" (using 0.002 for the second argument in this function returns the two-tenths percentile temperature of the hourly temperatures measured in the dataset used).

   <u>This value should be representative of the Extreme Cold Weather Temperature based on the given dataset.</u>



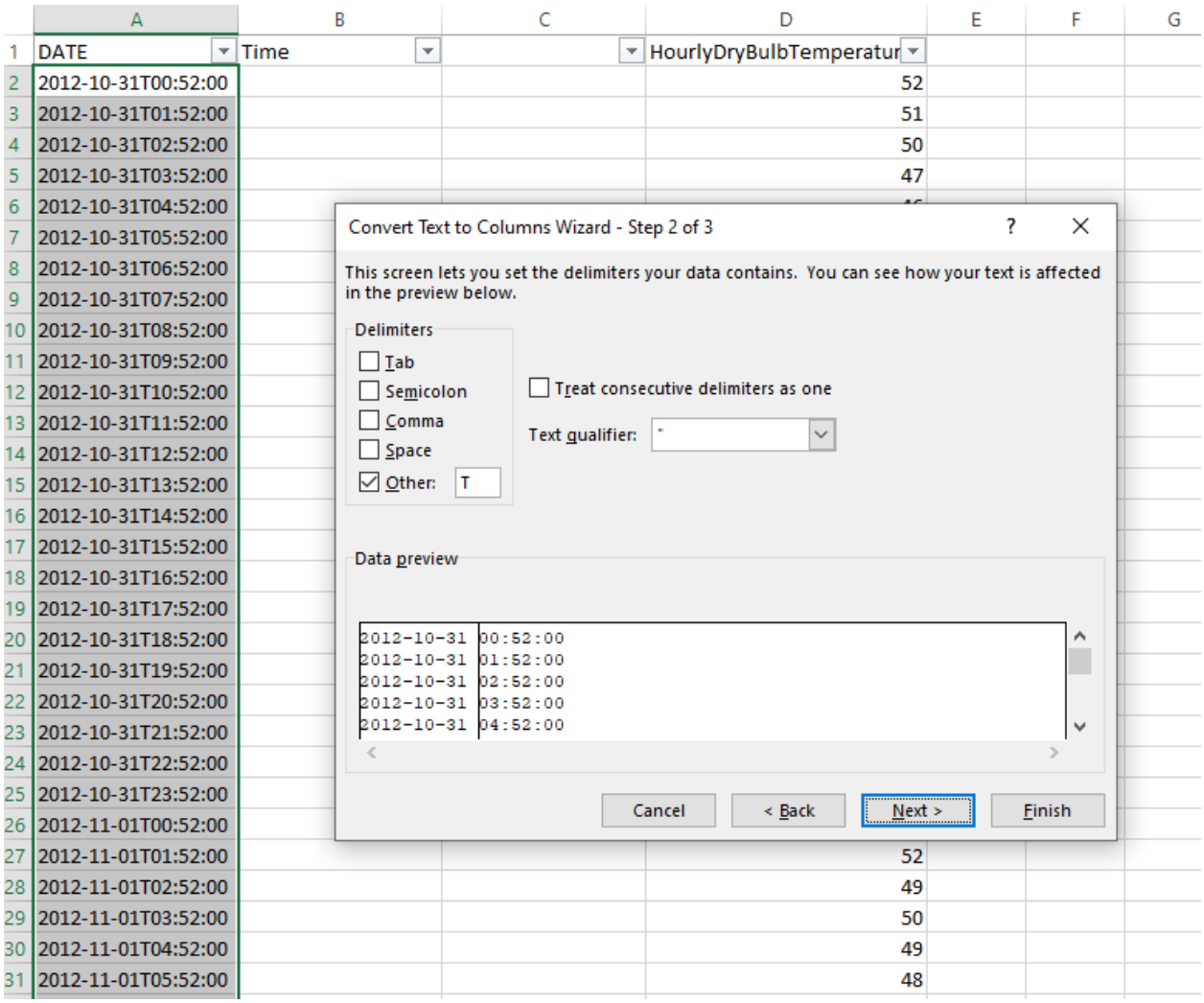
E5 | =PERCENTILE.INC(B:B,0.002)

	A	B	C	D	E	F	G
1	DATE	HourlyDryBulbTemperature	Month				
2	2012-12-01T00:52:00	58	12				
3	2012-12-01T01:52:00	58	12				
4	2012-12-01T02:52:00	59	12		ECWT		
5	2012-12-01T03:52:00	59	12		2		
6	2012-12-01T04:52:00	58	12				
7	2012-12-01T05:52:00	59	12				
8	2012-12-01T06:52:00	58	12				
9	2012-12-01T07:52:00	60	12				
10	2012-12-01T08:52:00	61	12				
11	2012-12-01T09:52:00	63	12				
12	2012-12-01T10:52:00	66	12				
13	2012-12-01T11:52:00	71	12				
14	2012-12-01T12:52:00	74	12				
15	2012-12-01T13:52:00	75	12				
16	2012-12-01T14:52:00	77	12				
17	2012-12-01T15:52:00	76	12				
18	2012-12-01T16:52:00	73	12				
19	2012-12-01T17:52:00	67	12				

Option 2

These next few steps demonstrate how to view the distribution of temperatures from the data set and obtain the Extreme Cold Weather Temperature by a slightly different method.

1. On the "Clean and Filter" sheet, insert two new columns between column A and column B. Select column A and use Excel's *Text to Columns* feature and selected the delimited option and use the letter "T" to split the date data into a date component and a time component by hitting "Next" and "Finish". (Note: You can also do a "Find and Replace, finding the letter T and replacing it with a space to change the information in the Date column to a numerical value that can then be used for calculations.)

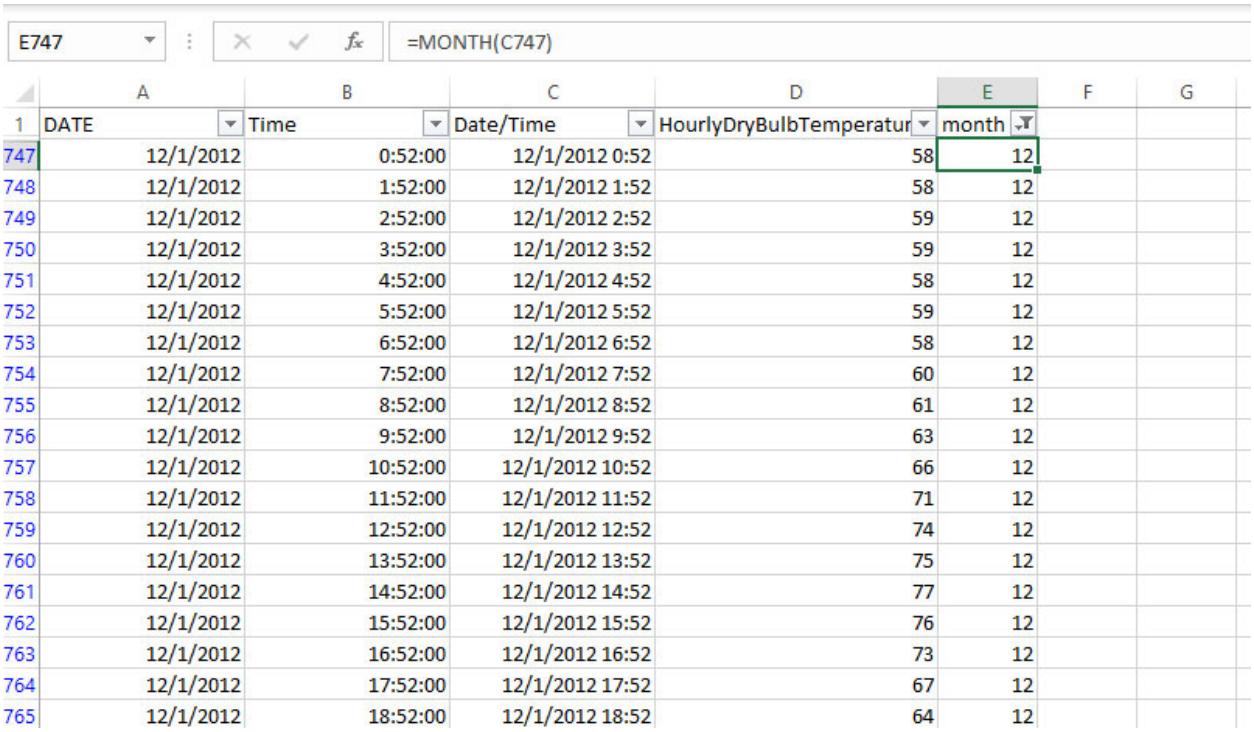


2. Add in column C, add the date in column A to time in column B, and copy this formula for all rows of the data set.

C2 =A2+B2

	A	B	C	D
1	DATE	Time	Date/Time	HourlyDryBulbTemperatur
2	10/31/2012	0:52:00	10/31/2012 0:52	52
3	10/31/2012	1:52:00	10/31/2012 1:52	51
4	10/31/2012	2:52:00	10/31/2012 2:52	50
5	10/31/2012	3:52:00	10/31/2012 3:52	47
6	10/31/2012	4:52:00	10/31/2012 4:52	46
7	10/31/2012	5:52:00	10/31/2012 5:52	46
8	10/31/2012	6:52:00	10/31/2012 6:52	44
9	10/31/2012	7:52:00	10/31/2012 7:52	48
10	10/31/2012	8:52:00	10/31/2012 8:52	52
11	10/31/2012	9:52:00	10/31/2012 9:52	57
12	10/31/2012	10:52:00	10/31/2012 10:52	61
13	10/31/2012	11:52:00	10/31/2012 11:52	65
14	10/31/2012	12:52:00	10/31/2012 12:52	67
15	10/31/2012	13:52:00	10/31/2012 13:52	68
16	10/31/2012	14:52:00	10/31/2012 14:52	71
17	10/31/2012	15:52:00	10/31/2012 15:52	71
18	10/31/2012	16:52:00	10/31/2012 16:52	70
19	10/31/2012	17:52:00	10/31/2012 17:52	66
20	10/31/2012	18:52:00	10/31/2012 18:52	62
21	10/31/2012	19:52:00	10/31/2012 19:52	59
22	10/31/2012	20:52:00	10/31/2012 20:52	54
23	10/31/2012	21:52:00	10/31/2012 21:52	51

3. Type Month in cell E1, and in cell E2 use the formula "=month(C2)". Copy the formula for all rows of the data set, then filter based on month, only selecting 1,2,12 for the desired months. Then copy remaining data from column C and column D to a sheet named Histogram.



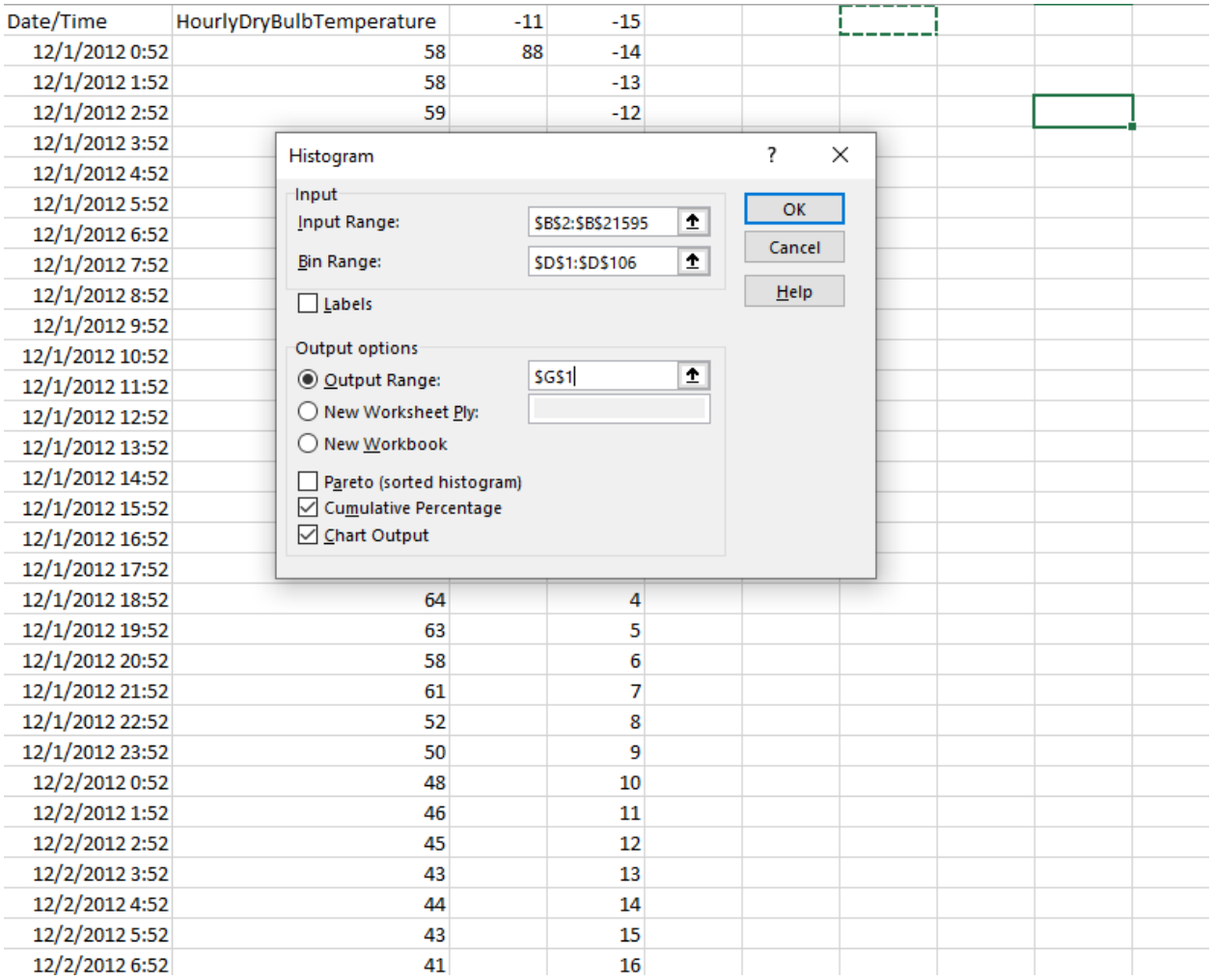
E747 =MONTH(C747)

	A	B	C	D	E	F	G
1	DATE	Time	Date/Time	HourlyDryBulbTemperatur	month		
747	12/1/2012	0:52:00	12/1/2012 0:52	58	12		
748	12/1/2012	1:52:00	12/1/2012 1:52	58	12		
749	12/1/2012	2:52:00	12/1/2012 2:52	59	12		
750	12/1/2012	3:52:00	12/1/2012 3:52	59	12		
751	12/1/2012	4:52:00	12/1/2012 4:52	58	12		
752	12/1/2012	5:52:00	12/1/2012 5:52	59	12		
753	12/1/2012	6:52:00	12/1/2012 6:52	58	12		
754	12/1/2012	7:52:00	12/1/2012 7:52	60	12		
755	12/1/2012	8:52:00	12/1/2012 8:52	61	12		
756	12/1/2012	9:52:00	12/1/2012 9:52	63	12		
757	12/1/2012	10:52:00	12/1/2012 10:52	66	12		
758	12/1/2012	11:52:00	12/1/2012 11:52	71	12		
759	12/1/2012	12:52:00	12/1/2012 12:52	74	12		
760	12/1/2012	13:52:00	12/1/2012 13:52	75	12		
761	12/1/2012	14:52:00	12/1/2012 14:52	77	12		
762	12/1/2012	15:52:00	12/1/2012 15:52	76	12		
763	12/1/2012	16:52:00	12/1/2012 16:52	73	12		
764	12/1/2012	17:52:00	12/1/2012 17:52	67	12		
765	12/1/2012	18:52:00	12/1/2012 18:52	64	12		

4. On the Histogram sheet, enter "=min(B:B)" in cell C1, and "=max(B:B)" in cell C2. This will give you the minimum and maximum temperatures in the dataset. We will use the temperatures to set range for this histogram. In Column D start with a value, a few degrees below the min, then list every degree to a few degrees above the max.

Date/Time	HourlyDryBulbTemperature	-11	-15	
12/1/2012 0:52	58	88	-14	
12/1/2012 1:52	58		-13	
12/1/2012 2:52	59		-12	
12/1/2012 3:52	59		-11	
12/1/2012 4:52	58		-10	
12/1/2012 5:52	59		-9	
12/1/2012 6:52	58		-8	
12/1/2012 7:52	60		-7	
12/1/2012 8:52	61		-6	
12/1/2012 9:52	63		-5	
12/1/2012 10:52	66		-4	
12/1/2012 11:52	71		-3	
12/1/2012 12:52	74		-2	
12/1/2012 13:52	75		-1	
12/1/2012 14:52	77		0	
12/1/2012 15:52	76		1	
12/1/2012 16:52	73		2	
12/1/2012 17:52	67		3	
12/1/2012 18:52	64		4	
12/1/2012 19:52	63		5	
12/1/2012 20:52	58		6	
12/1/2012 21:52	61		7	
12/1/2012 22:52	52		8	
12/1/2012 23:52	50		9	
12/2/2012 0:52	48		10	
12/2/2012 1:52	46		11	
12/2/2012 2:52	45		12	
12/2/2012 3:52	43		13	
12/2/2012 4:52	44		14	
12/2/2012 5:52	43		15	
12/2/2012 6:52	41		16	
12/2/2012 7:52	38		17	
12/2/2012 8:52	44		18	

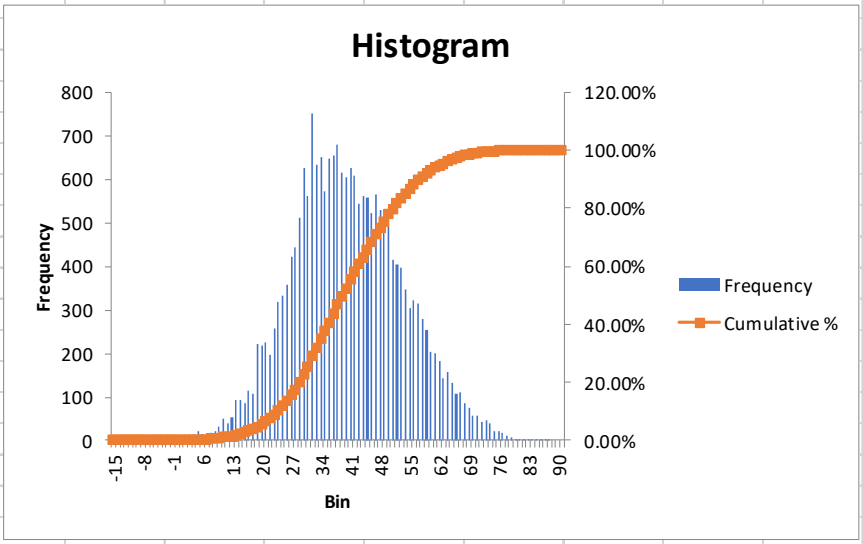
5. In the Data Analysis ToolPak in excel, select histogram. Select all dry bulb temperatures for your Input Range. Select all the Temperatures in column D for our Bin Range. Select an empty cell for your Output Range. Check the Cumulative Percentage and Chart Output boxes.



Date/Time	HourlyDryBulbTemperature	-11	-15
12/1/2012 0:52	58	88	-14
12/1/2012 1:52	58		-13
12/1/2012 2:52	59		-12
12/1/2012 3:52			
12/1/2012 4:52			
12/1/2012 5:52			
12/1/2012 6:52			
12/1/2012 7:52			
12/1/2012 8:52			
12/1/2012 9:52			
12/1/2012 10:52			
12/1/2012 11:52			
12/1/2012 12:52			
12/1/2012 13:52			
12/1/2012 14:52			
12/1/2012 15:52			
12/1/2012 16:52			
12/1/2012 17:52			
12/1/2012 18:52	64		4
12/1/2012 19:52	63		5
12/1/2012 20:52	58		6
12/1/2012 21:52	61		7
12/1/2012 22:52	52		8
12/1/2012 23:52	50		9
12/2/2012 0:52	48		10
12/2/2012 1:52	46		11
12/2/2012 2:52	45		12
12/2/2012 3:52	43		13
12/2/2012 4:52	44		14
12/2/2012 5:52	43		15
12/2/2012 6:52	41		16

6. The output from this will provide a listing of percentile rankings for the listed temperatures, as well as a graph output of the distribution of temperatures contained in this dataset. The "Bin" column shows the temperature, "Frequency" shows how many times that temperature occurred within the dataset, and "Cumulative %" shows the percentile ranking for each temperature. Choose the temperature at or closest to the 0.2 percentile level.

Bin	*Frequency*	*umulative %*
-15	0	0.00%
-14	0	0.00%
-13	0	0.00%
-12	0	0.00%
-11	1	0.00%
-10	0	0.00%
-9	2	0.01%
-8	0	0.01%
-7	1	0.02%
-6	4	0.04%
-5	4	0.06%
-4	4	0.07%
-3	1	0.08%
-2	4	0.10%
-1	6	0.13%
0	5	0.15%
1	3	0.16%
2	11	**0.21%**
3	5	0.24%
4	13	0.30%
5	22	0.40%
6	14	0.46%
7	12	0.52%
8	17	0.60%
9	23	0.70%
10	32	0.85%
11	50	1.08%
12	39	1.26%
13	53	1.51%
14	93	1.94%
15	92	2.37%
16	86	2.76%

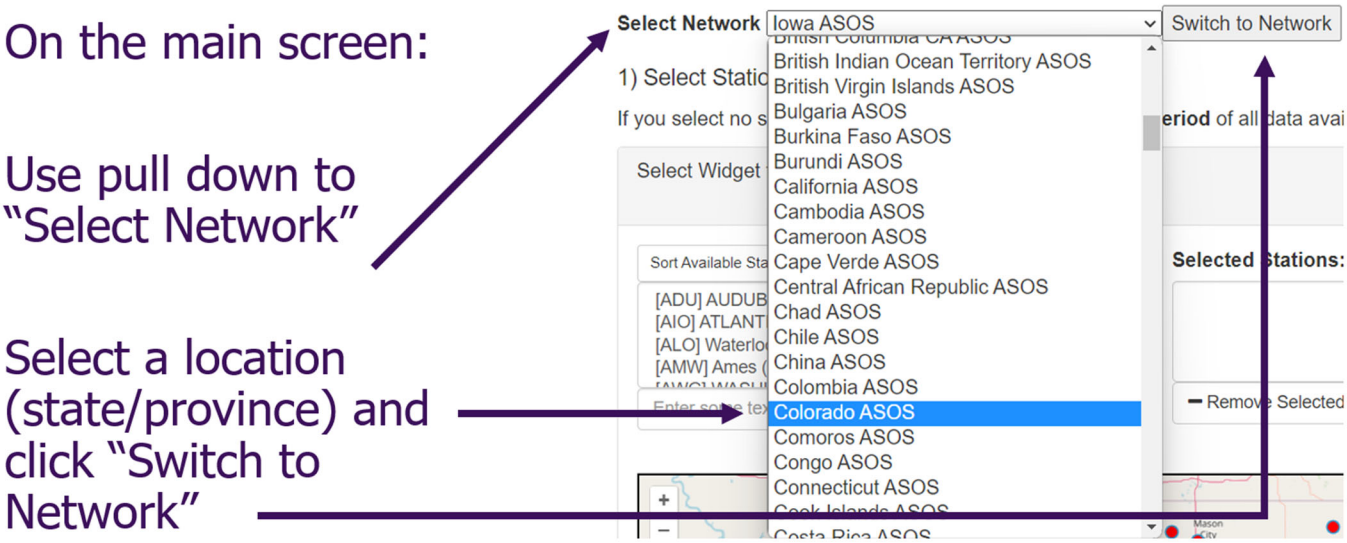


Gathering Data From ASOS

The Automated Surface Observing System (ASOS) program is a joint effort between the National Weather Service (NWS), the Federal Aviation Administration (FAA), and the Department of Defense (DOD). The primary function of ASOS stations is to take minute-by-minute observations and generate weather reports for use. The National Center for Environmental Information (NCEI) provides an archive of one-minute internal observations for many US ASOS sites back to the year 2000. Data is not available for all sites back to the year 2000.

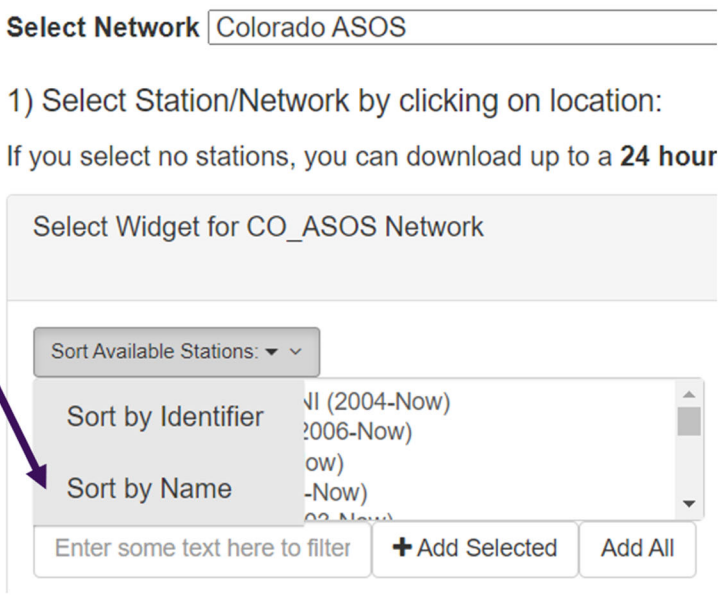
Each ASOS station is designed to provide observations every minute of every hour of every day. In general, ASOS stations are located at airports so may limit some use for ECWT calculations depending upon the Generator Owner selection process. Sensors measure wind speed and direction, dew point, air temperature, and station pressure. The vast majority also measure precipitation type and amount, visibility, and cloud height and thickness. Data is available for Canadian airports. More information is available at IEM :: ASOS/AWOS Network (iastate.edu) and https://mesonet.agron.iastate.edu/request/download.phtml where the example graphics were gathered. Additional information is available at ASOS (weather.gov).

1. Selecting Data
   ASOS uses "Network" to describe particular locations. From the main screen you would use the pulldown for "Select Network" and then select a particular location.



Sorting the data is available by an "identifier" (the airport code) or "name" (city or airport name normally) with "name" probably providing the easier way to identify the location needed to facilitate ECWT calculation efforts. This is needed to support the weather station selection. When downloading the information, the "identifier" will be included in the data set, so it is recommended that you ensure you are getting the correct location by both name and identifier.

Select "Sort by Identifier" or "Sort by Name" on the "Sort Available Stations" drop down.



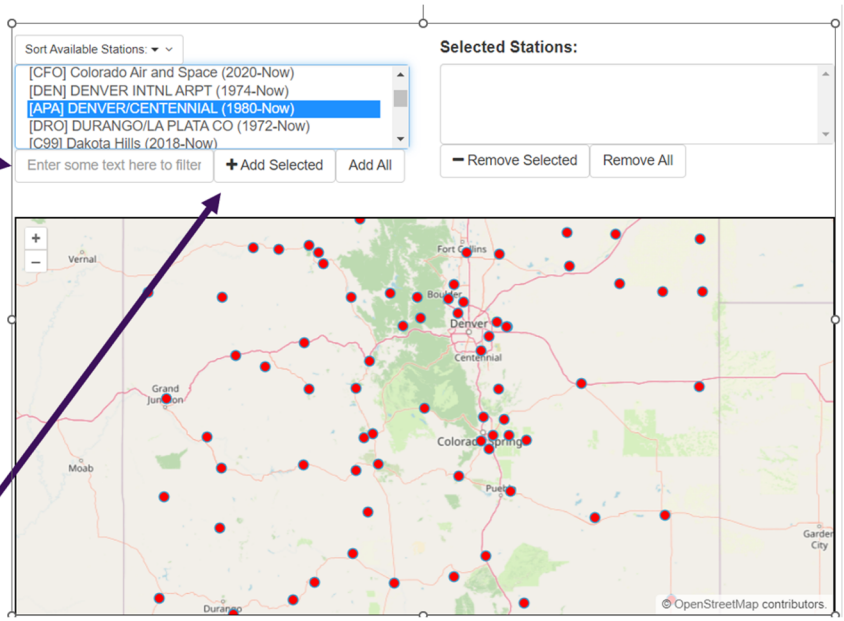
A map of available weather stations is provided along with options to select a particular weather station. Make sure you select "+ADD Selected" toggle button to capture the weather station.

Text search

Or can use the map to find a station name/ID

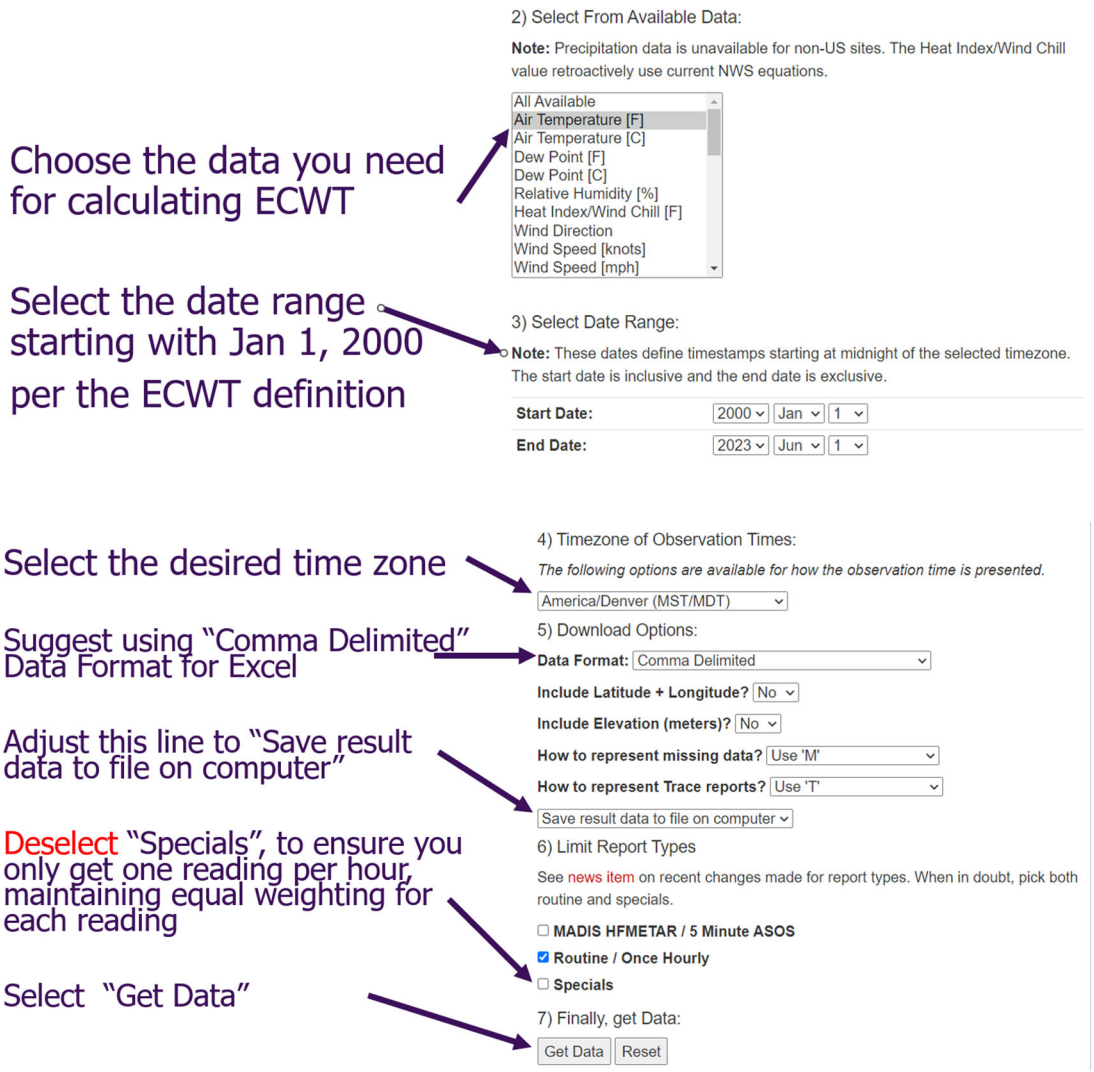
Or can just scroll and choose the station desired.

Select "+Add Selected"



At this point you can select data types, date ranges, time zones, data formats, download options, and report types. Note that some data types may not be available for the location. As discussed with the NOAA example, if hourly values for temperature are not available, document in your methodology or support documents how that is managed. It is important to note what may be missing/corrupt and how you approach that condition. As of yet, no criteria has been set to indicate how much can be missing (or present) to be considered an appropriate calculation of ECWT. Use professional judgement and present it in the best way possible if asked.

Make sure you understand the "Notes" ASOS provides when selecting data.

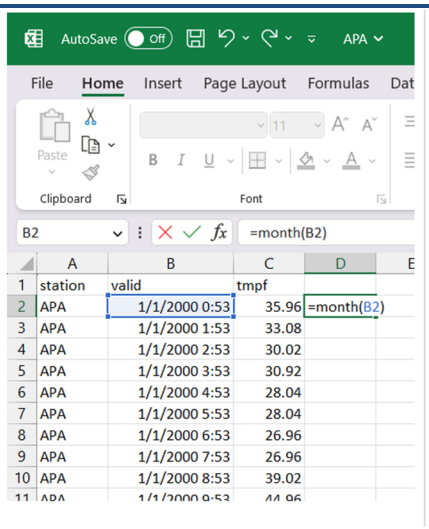


Note the "Deselection" verbiage as this could lead to possible erroneous ECWT calculations if left selected. By removing the Specials, the data set will have fewer duplicate readings in the data set.

After selecting "Get Data" you should receive a download with the filtered data. It is important to retain this raw file. The file should conatin every hour for every month for the Date Range selected. This helps preserve the documentation to demonstrate the means by which you arrived at the ECWT you determine.
The ECWT definition only requires the months of December, January, and February to be selected. Once you have the comma delimited file, save it as an Excel worksheet. Then use the "MONTH" function to provie a simple numeric value (e.g., January = 1, February = 2, etc) and then filter on 1, 2, and 12 to get the three months required by the ECWT definition.

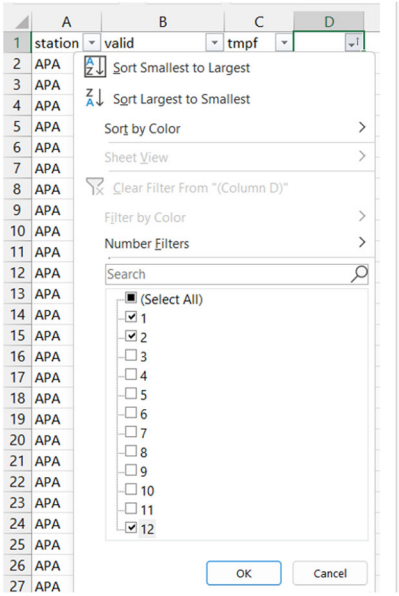
ECWT only uses the months of January, February and December.

Use the MONTH function to get a numeric value in an empty column and then copy that formula down through the end of the data set. Other filtering options can be used.



	A	B	C	D
1	station	valid	tmpf	
2	APA	1/1/2000 0:53	35.96	=month(B2)
3	APA	1/1/2000 1:53	33.08	
4	APA	1/1/2000 2:53	30.02	
5	APA	1/1/2000 3:53	30.92	
6	APA	1/1/2000 4:53	28.04	
7	APA	1/1/2000 5:53	28.04	
8	APA	1/1/2000 6:53	26.96	
9	APA	1/1/2000 7:53	26.96	
10	APA	1/1/2000 8:53	39.02	

Once a numeric value is produced you can simply use excel filters.



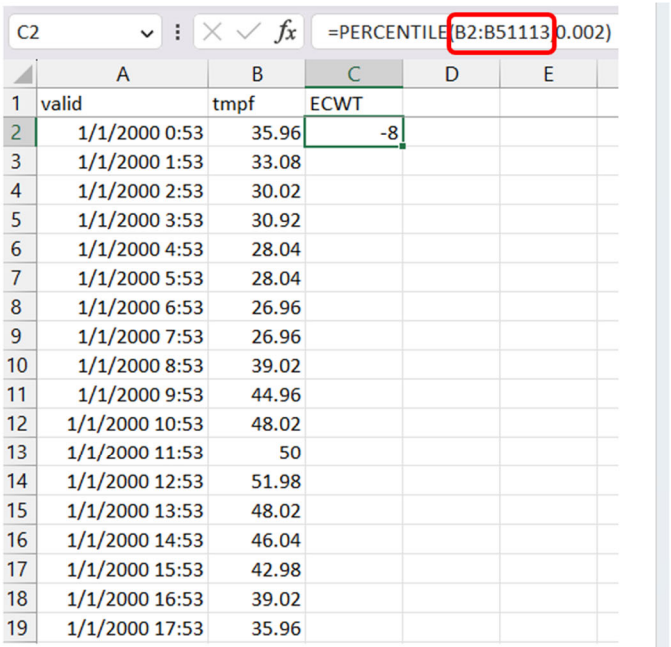
It is suggested that you highlight and copy the filtered data to another worksheet or file. Again, if moving the data to a separate spreadsheet be sure to maintain this original file for documentation.

When you paste the data into the new worksheet, you will have the the data from December, Janauary and February from all years needed to caculate ECWT. Add the Microsoft Excel function "PERCENTILE" to a new cell with the proper percentile value from the ECWT definition (i.e. "0.2 percentile" which for Excel is .002)). Make sure you capture your complete data set. (Example: =PERCENTILE(B:B,.002))

Compute the ECWT using the PERCENTILE function in Excel:

=PERCENTILE(range,0.002)

Ensure your range includes all the data points (e.g., B2:B51113 in the example)



	A	B	C	D	E
1	valid	tmpf	ECWT		
2	1/1/2000 0:53	35.96	-8		
3	1/1/2000 1:53	33.08			
4	1/1/2000 2:53	30.02			
5	1/1/2000 3:53	30.92			
6	1/1/2000 4:53	28.04			
7	1/1/2000 5:53	28.04			
8	1/1/2000 6:53	26.96			
9	1/1/2000 7:53	26.96			
10	1/1/2000 8:53	39.02			
11	1/1/2000 9:53	44.96			
12	1/1/2000 10:53	48.02			
13	1/1/2000 11:53	50			
14	1/1/2000 12:53	51.98			
15	1/1/2000 13:53	48.02			
16	1/1/2000 14:53	46.04			
17	1/1/2000 15:53	42.98			
18	1/1/2000 16:53	39.02			
19	1/1/2000 17:53	35.96			

In the above example, the ECWT is -8 (cell C1) based on the data in column B. Essentially you have completed your ECWT at this point, but it is important to do a quality check or other validation effort. You want to make sure you have the most complete set of data that is as free of errors as possible to determine the ECWT.

To help ensure data quality assurance you should evaluate how many hours of data you might expect for the given year an ECWT is being calculated. Using the "COUNTA" Excel function and the data range will provide a value but a check on that value is encouraged. The basic premise is to calculate the number of "full" years by 90 (the number of days i.e., January and December have 31 and February has 28) by 24 (number of hours in a day) plus the number of past leap years (years with 29 days in February) by 24 (number of hours in a day) plus the number of days in January and February for the current year by 24 (number of hours in a day). Note: "Full" years is inclusive of 2000. It is not stated in the Standard but when recalculating the ECWT, you are encouraged to recalculate ***after*** February has passed and before December of the year in which you are recalculating to provide the most up to date information.

Effectively, if this example is used, the calculation for March 2024 would look like:

(24X90X24) + (6X24) + (60X24) = 53424 data points where "full" years is 24 for 2000-2023, leap years included in the calculation is 7 (2000, 20004, 2008, 2012, 2016, 2020 and 2024), and days in the current year is 59 (January is 31 and February is 28 with February 29 accounted for in the leap years). Other methods can be used of course but make sure you retain how you came up with the value.

If you noticed ASOS provides filters for missing data but may not capture missing hours. You can use Excel in a variety of ways to verify if the number of hours accounted for in the data range selected. To the point made earlier, all hours may not be available for an ECWT calculation due to a variety of issues. If a large number of hours are missing, consider using other weather stations within close proximity or the combination of NWS/NOAA and ASOS data (regardless of what your primary data source is) in an attempt to capture a fuller data set. The key is

documenting what is missing and what you did with your approach. To date there has not been an approach to determine the statistical significance "margin" for ECWT.

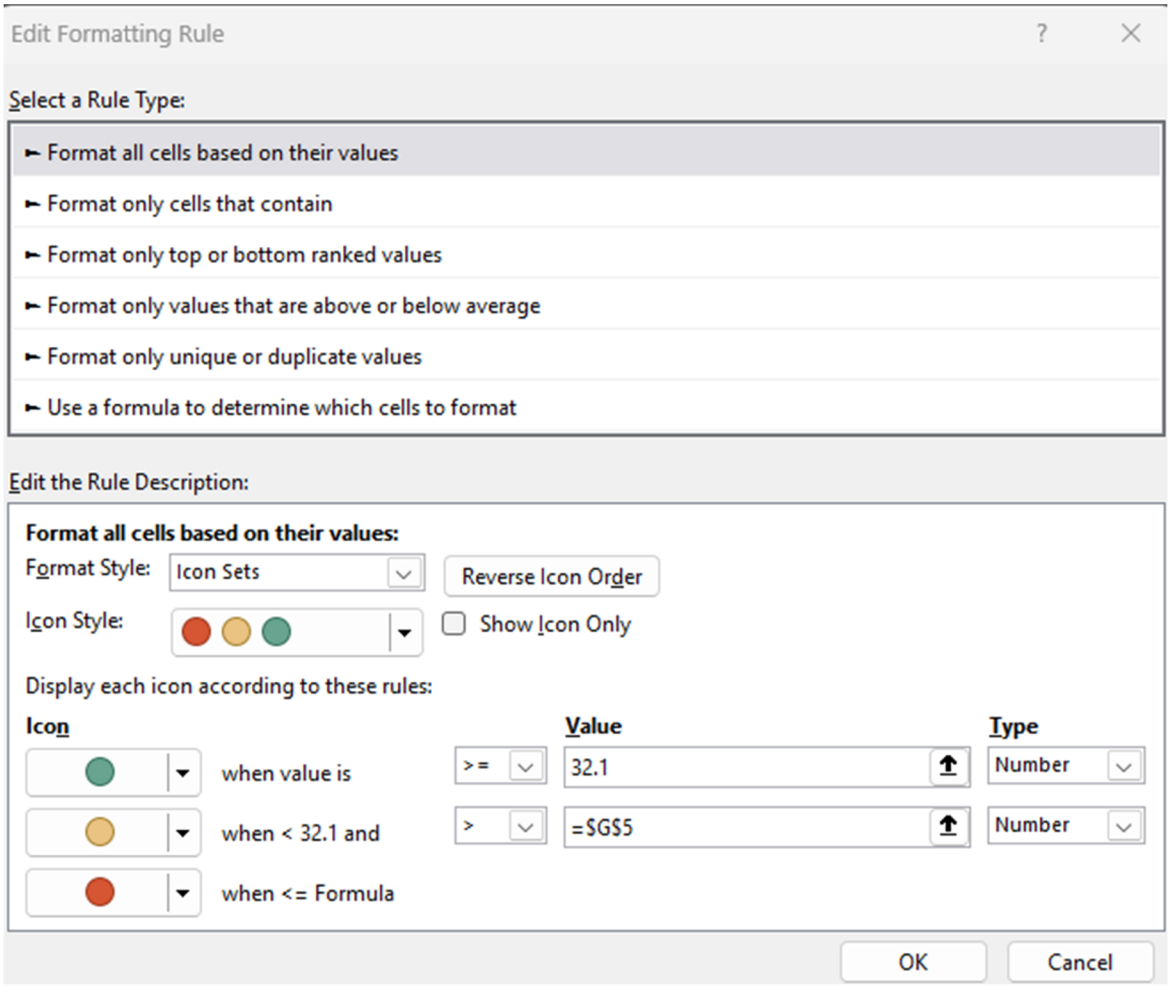
Excel also provides the ability to visualize when temperatures drop below ECWT, hover around ECWT, or exceed ECWT if more analysis is needed. This visualization, in conjunction with your efforts to find missing hours may provide insight for your approach to missing data. In any case, document what you have done.

valid	Month	tmpf	Time Check	ECWT	Data Points	Missing Data Points
1/1/2000 8:56	1	42.8		**6.000**	53247	177
1/1/2000 9:56	1	46	1.00			
1/1/2000 10:56	1	57	1.00	Reord low temp		-17
1/1/2000 11:56	1	68	1.00	Maximum		
1/1/2000 12:56	1	72	1.00	6,603.00		
1/1/2000 13:56	1	72	1.00	Minimum		
1/1/2000 14:56	1	72	1.00	0.05		
1/1/2000 15:56	1	71	1.00			
1/1/2000 16:56	1	69	1.00			
1/1/2000 17:56	1	65	1.00			

This picture shows one way that can be used to verify the data is reasonably complete. The Data Points of 53,247 is compared to the total number of hours that are included from January 1, 2000 through February 29, 2024 of 53, 424. The Data Points number is found by using the =COUNT function and highlighting the data in the "tmpf" column.

To evaluate the missing data points, the Time Check column compares the time shown on the row above with the time on that row. The formula for this is =(B6-B5)*24. If the results of this formula is less than 1, there is possibly duplicate readings for that hour. If the result is 2 or more, it indicates that there are missing data points. Note that the first hour each December will be 6601 or greater since we do not use any hours March through November. Use Conditional Formatting in the Time Check column to highlight cells with numbers less than 0.9 and greater than 1.1 to quickly identify missing or duplicate data points.

You can also use Conditional Formatting to identify hours that are above freezing, below freezing but above the ECWT and temperatures equal to or below the ECWT. This can help determine if the missing data points are likely to cause a change in the ECWT. This shows the Conditional Formatting rule assuming the ECWT is shown in cell G5:


Edit Formatting Rule
Select a Rule Type:
Format all cells based on their values
Format only cells that contain
Format only top or bottom ranked values
Format only values that are above or below average
Format only unique or duplicate values
Use a formula to determine which cells to format
Edit the Rule Description:
Format all cells based on their values:
Format Style:
Icon Sets
Reverse Icon Order
Icon Style:
Show Icon Only
Display each icon according to these rules:
Icon
Value
Type
when value is
>=
32.1
Number
when < 32.1 and
>
=$G$5
Number
when <= Formula
OK
Cancel

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

UPDATED
Standards Announcement
Project 2024-03 Revisions to EOP-012-2

Comment Period Open through March 12, 2025

Updated Draft Now Available

A 45-day comment period for proposed Reliability Standard **EOP-012-3 Extreme Cold Weather Preparedness and Operations** is open through **8 p.m. Eastern, Wednesday, March 12, 2025**. There is no ballot associated with this comment period.

The posted draft has been updated to include the following compliance provision in Section C of the standard:

"*From the effective date of Reliability Standard EOP-012-3 until October 1, 2027, the Compliance Enforcement Authority will not pursue an action under Sections 4A.0 or 5.0 of Appendix 4C to the Rules of Procedure for a failure to comply with Reliability Standard EOP-012-3 Requirement R1 Part 1.1 with respect to the calculation of the Extreme Cold Weather Temperature for an applicable generating unit, or any other failure to comply resulting from an incorrect calculation of the Extreme Cold Weather Temperature for that generating unit, against any entity acting in good faith to comply with the standard in accordance with the relevant implementation plan. "Good faith" in this context refers to a sincere intention to comply with Reliability Standard EOP-012-3, regarding all requirements based on the calculation of the Extreme Cold Weather Temperature for each applicable generating unit, following a reasonable and serious assessment by the entity in determining how this Reliability Standard should be applied to its particular facts and circumstances. Entities shall participate in any compliance monitoring activities undertaken by the Compliance Enforcement Authority during this abeyance period and submit documentation as requested*"

This provision has been added to address an issue raised during previous stakeholder comment periods of high importance to generators relating to the calculation of the Extreme Cold Weather Temperature for an applicable generating unit; particularly, how generators should account for gaps in hourly data in cold weather data sets. This provision states the ERO Enterprise's intent that, for a period of two years following the effective date of Reliability Standard EOP-012-3, the ERO Enterprise will not pursue an enforcement action against entities attempting to comply in good faith with the standard's requirements related to the calculation of the Extreme Cold Weather Temperature. During this two year period, the ERO Enterprise would closely monitor implementation of Reliability Standard EOP-012-3 to determine if additional refinements to the standard are warranted.

This updated posting makes no modifications to the mandatory and enforceable elements of proposed EOP-012-3; as developed by the drafting team and the Standards Committee.

The inclusion of this language is made in alignment with the Supplemental Filing ERO Assessment 2024 from November 2024 which was accepted by FERC in December 2024.

Please refer to the project page for the updated proposed Reliability Standard EOP-012-3 Extreme Cold Weather Preparedness and Operations Clean and Redline versions. The language has been highlighted in the posted drafts to assist in identifying the redlines for this modification.

Commenting

Use the Standards Balloting and Commenting System (SBS) to submit comments. An unofficial Word version of the comment form is posted on the project page.

- *Contact NERC IT support directly at https://support.nerc.net/ (Monday – Friday, 8 a.m. - 5 p.m. Eastern) for problems regarding accessing the SBS due to a forgotten password, incorrect credential error messages, or system lock-out.*
- *Passwords expire every **6 months** and must be reset.*
- *The SBS **is not** supported for use on mobile devices.*
- *Please be mindful of ballot and comment period closing dates. We ask to **allow at least 48 hours** for NERC support staff to assist with inquiries. Therefore, it is recommended that users try logging into their SBS accounts **prior to the last day** of a comment/ballot period.*

Next Steps

A special Board meeting will take place in **March 2025** to review the standard and a complete record, including the comments submitted during the public comment period.

For information on the Standards Development Process, refer to the Standard Processes Manual.

For more information or assistance, contact Senior Standards Developer, Ben Wu (via email) or at 470-542-6882. Subscribe to this project's observer mailing list by selecting "NERC Email Distribution Lists" from the "Service" drop-down menu and specify “Project 2024-03 Revisions to EOP-012-2 observer list” in the Description Box.

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NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2024-03 Revisions to EOP-012-2

Comment Period Open through March 12, 2025

Now Available

A 45-day comment period for draft three of **EOP-012-3 Extreme Cold Weather Preparedness and Operations** is open through **8 p.m. Eastern, Wednesday, March 12, 2025**. There is no ballot associated with this comment period.

In June 2024, the Federal Energy Regulatory Commission (FERC) approved Reliability Standard EOP-012-2 and directed NERC to submit a revised version to address and clarify several aspects. The draft EOP-012-3 standard only achieved 44.54% approval on its most recent ballot, representing only a 2% improvement from the previous ballot.

To meet FERC's March 27, 2025, deadline, and in deference to the importance of this standard, the Board invoked its authority under **Section 321.5** of NERC's Rules of Procedure. Under this authority, the Board directed the Standards Committee, with the assistance of stakeholders and NERC staff, to prepare a responsive standard, which will then be posted for a 45-day public comment period, no later than January 29, 2025.

Commenting

Use the Standards Balloting and Commenting System (SBS) to submit comments. An unofficial Word version of the comment form is posted on the project page.

- *Contact NERC IT support directly at https://support.nerc.net/ (Monday – Friday, 8 a.m. - 5 p.m. Eastern) for problems regarding accessing the SBS due to a forgotten password, incorrect credential error messages, or system lock-out.*
- *Passwords expire every **6 months** and must be reset.*
- *The SBS **is not** supported for use on mobile devices.*
- *Please be mindful of ballot and comment period closing dates. We ask to **allow at least 48 hours** for NERC support staff to assist with inquiries. Therefore, it is recommended that users try logging into their SBS accounts **prior to the last day** of a comment/ballot period.*

Next Steps

A special Board meeting will take place in **March 2025** to review the standard and a complete record, including the comments submitted during the public comment period.

For information on the Standards Development Process, refer to the Standard Processes Manual.

For more information or assistance, contact Senior Standards Developer, Ben Wu (via email) or at 470-542-6882. Subscribe to this project's observer mailing list by selecting "NERC Email Distribution Lists" from the "Service" drop-down menu and specify “Project 2024-03 Revisions to EOP-012-2 observer list” in the Description Box.

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Comment Report

Project Name:	2024-03 Revisions to EOP-012-2 | Draft 3
Comment Period Start Date:	1/27/2025
Comment Period End Date:	3/12/2025
Associated Ballots:	

There were 43 sets of responses, including comments from approximately 108 different people from approximately 77 companies representing 7 of the Industry Segments as shown in the table on the following pages.

Questions

1. In paragraph 47 of the June 2024 Order, FERC directed NERC to revise EOP-012-2 and/or the definition of Generator Cold Weather Constraint to "ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them." FERC provided several examples of how NERC may meet directives in this paragraph and explained that NERC may address these concerns in an equally efficient and effective manner, provided NERC explains how it addresses FERC's concerns. FERC further directed NERC to remove references to "cost", "reasonable cost", "unreasonable cost" and "good business practices" and to replace them with clear and auditable criteria.

Proposed EOP-012-3 would revise the definition of Generator Cold Weather Constraint and provide a list in Attachment 1 to the standard of situations which would comprise "known" generator constraints, as well as a list of situations which may constitute constraints, depending on the facts and circumstances. In developing this list, the drafting team considered remarks from the November 2024 technical conference and industry comments on prior drafts.

Do you agree that the proposed revisions to the definition of Generator Cold Weather Constraint and addition of Attachment 1 address the FERC directives in paragraph 47? Please provide any additional comments to consider. If you do not agree, please provide your language change suggestions.

2. In paragraph 54 of the June 2024 Order, FERC directed NERC to modify EOP-012-2 "so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner."

To address this directive, proposed EOP-012-3 would require each Generator Owner that declares a constraint to submit it to the CEA for validation (Requirement R8 Part 8.1). Constraints shall be submitted within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable (for new units this time is within 15 days of entering commercial operation). The process for ERO review is addressed separately in an ERO process document.

Do you agree that the modifications in Requirement R8 are responsive to the FERC directive in paragraph 54? If you do not agree, please provide your language change suggestions.

3. In paragraph 68 of the June 2024 Order, FERC directed NERC to modify Requirement R7 of EOP-012-2 "to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event". FERC provided an example for how to address this directive, such as to require shorter timeframes for those units that have experienced issues and allow longer timeframes to address similar potential issues across a fleet for those units that have not experienced issues.

In proposed EOP-012-3, requirements for Corrective Action Plans for Generator Cold Weather Reliability Events are combined in Requirement R6. Requirement R6 now includes timeframes for CAP implementation for the unit that experiences the Generator Cold Weather Event (before the next winter season), timeframes for reviewing similar units for the same issue (12 months from the event) and timeframes for implementing CAPs on similar units that were determined to be susceptible to the identified freezing issues (24 months from the review,

or 36 months from the event). In developing these modifications, feedback from previous postings of the EOP-012-3 standard were considered.

Do you agree that the modifications in Requirement R6 are responsive to the FERC directive in paragraph 68? If you do not agree, please provide your language change suggestions.

4. In paragraph 70 of the June 2024 Order, FERC directed NERC "to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC." In paragraph 3 of the June 2024 Order, FERC stated that NERC should "ensure that the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension."

In proposed EOP-012-3, Requirement R6 Part 6.4 and Requirement R7 Part 7.2 were added to require any Generator Owner seeking to extend a Corrective Action Plan (CAP) implementation deadline beyond the maximum implementation timeframe, to seek pre-approval of the extension by the CEA. The standard specifies the information that must be included in any submission to allow for this review, including an explanation of the circumstances causing the delay and why those circumstances are beyond the control of the GO, revisions to the CAP in the interim, and an updated timetable for completion.

The drafting team determined that any entities with a need could request information on operating limitations – temporary or otherwise - under the data specification standards (TOP-003, IRO-010), or through other mechanisms for obtaining up-to-date information on the status and availability of generators, and determined to not include a separate requirement for such notifications in EOP-012-3.

Do you agree that the modifications in Requirement R6 Part 6.4 and Requirement R7 Part 7.2 are responsive to the FERC directives above? If you do not agree, please provide your language change suggestions.

5. Paragraph 72 June 2024 Order, FERC stated: "[W]e…find that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation." FERC directed NERC to develop and submit modifications to Requirement R7, Reliability Standard EOP-012-2 to clarify that any Requirement R7 Corrective Action Plans (CAPs) for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

To remove the CAP option from new generation entering commercial operation on or after October 1, 2027, which is consistent with the original EOP-012-1 standard. The drafting team chose to allow a limited CAP option for certain generators whose design criteria were finalized prior to the first version of the EOP-012 standard being approved, and that will come into commercial operation during the first winter the more stringent requirements for new generation are in effect (i.e. winter 2027-2028). These units would be allowed the option to enter commercial operation and complete any required CAPs by April 1, 2028.

To address industry comments on previous drafts, further clarification is made in Requirement R6 as to scope and applicability and to confirm no retroactive applicability is intended, and additional supporting rationale for the selected bookend dates is provided in the Technical Rationale.

Do you agree that the modifications in EOP-012-3 Requirement R2 are responsive to the FERC directives? If you do not agree, please provide your language change suggestions.

6. In paragraph 76 of the June 2024 Order, FERC directs NERC to remove ambiguities in the Corrective Action Plan implementation plan timelines. As an example, FERC cites the timelines for new, compared to existing, freeze protection measures.

Requirement R7 was revised to clarify that actions to address issues with existing measures must be completed within 24 months, regardless of any longer timeframes for new measures. Requirements for Corrective Action Plans for Generator Cold Weather Reliability Events are discussed in further detail above. Do you agree that the edits are responsive to the FERC directive in paragraph 76? If you do not agree, please provide your language change suggestions.

7. In paragraph 94 of the June 2024 Order, FERC directs NERC "to develop and submit modifications to Requirement R8, Part 8.1 of proposed Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations" (i.e. more frequent than every five years) "to verify that the declaration remains valid".

In proposed EOP-012-3, new Requirement 9 was created to require a review of each constraint at least once every 36 calendar months. In establishing this timeframe, the drafting team considered feedback provided on appropriate periodicities and sought to balance the burdens of more frequent reviews with the benefit to reliability of implementing new technologies as they become available. Do you agree that the modifications reflected in new Requirement R9 are responsive to the FERC Directives? If you do not agree, please provide your language change suggestions.

8. Under Section 321.5.1 of the NERC Rules of Procedure, the Board of Trustees is to consider whether any proposed standard developed under that section is practical, technically sound, technically feasible, cost-justified and serves the best interests of reliability of the Bulk Power System, among other things. Considering the FERC directives provided above, please provide any other comments you wish the Board of Trustees to consider in whether to adopt proposed Reliability Standard EOP-012-3.

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
BC Hydro and Power Authority	Adrian Andreoiu	1,3,5	WECC	BC Hydro	Hootan Jarollahi	BC Hydro and Power Authority	3	WECC
					Helen Hamilton Harding	BC Hydro and Power Authority	5	WECC
					Adrian Andreoiu	BC Hydro and Power Authority	1	WECC
MRO	Anna Martinson	1,2,3,4,5,6	MRO	MRO Group	Shonda McCain	Omaha Public Power District (OPPD)	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					Jamison Cawley	Nebraska Public Power District	1,3,5	MRO
					Jay Sethi	Manitoba Hydro (MH)	1,3,5,6	MRO
					Husam Al-Hadidi	Manitoba Hydro (System Preformance)	1,3,5,6	MRO
					Kimberly Bentley	Western Area Power Adminstration	1,6	MRO
					George Brown	Pattern Operators LP	5	MRO
					Amy Key	MidAmerican Energy Company (MEC)	1	MRO
					Dane Rogers	Oklahoma Gas and Electric (OG&E)	1,3,5,6	MRO
					Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO
					Michael Ayotte	ITC Holdings	1	MRO
					Peter Brown	Invenergy	5,6	MRO
					Angela Wheat	Southwestern Power Administration	1	MRO
					Joshua Phillips	Southwest Power Pool	2	MRO

					Patrick Tuttle	Oklahoma Municipal Power Authority	4,5	MRO
					Hayden Maples	Evergy	1,3,5,6	MRO
					Kirsten Rowley	MISO	2	MRO
WEC Energy Group, Inc.	Christine Kane	3,4,5,6		WEC Energy Group	Christine Kane	WEC Energy Group, Inc.	3	RF
					Michelle Hribar	WEC Energy Group, Inc.	5	RF
					David Boeshaar	WEC Energy Group, Inc.	6	RF
					Candace Morakinyo	WEC Energy Group, Inc.	4	RF
ACES Power Marketing	Jodirah Green	1,3,4,5,6	MRO,NPCC,RF,SERC,Texas RE,WECC	ACES Collaborators	James Shultz	Hoosier Energy Electric Cooperative	1	RF
					Kris Carper	Arizona Electric Power Cooperative, Inc.	1	WECC
					Jordan Mcclellan	Southern Illinois Power Cooperative	1	SERC
					Jason Procuniar	Buckeye Power, Inc.	4	RF
					Scott Brame	North Carolina Electric Membership Corporation	3,4,5	SERC
					Bill Pezalla	Old Dominion Electric Cooperative	3,4	SERC
Black Hills Corporation	Josh Schumacher	1,3,5,6		Black Hills Corporation Segments 1, 3, 5, 6	Trevor Rombough	Black Hills Corporation	1	WECC
					Josh Combs	Black Hills Corporation	3	WECC
					Sheila Suurmeier	Black Hills Corporation	5	WECC
					Josh Schumacher	Black Hills Corporation	6	WECC
Electric Reliability Council of Texas, Inc.	Kennedy Meier	2		ISO/RTO Council Standards Review	Kennedy Meier	Electric Reliability Council of Texas, Inc.	2	Texas RE

				Committee (SRC)	Joshua Phillips	Southwest Power Pool, Inc. (RTO)	2	MRO
					Kirsten Rowley	Midcontinent ISO, Inc.	2	RF
					Gregory Campoli	New York Independent System Operator	2	NPCC
					Thomas Foster	PJM Interconnection, L.L.C.	2	RF
					Darcy O'Connell	California ISO	2	WECC
					John Pearson	ISO New England, Inc.	2	NPCC
FirstEnergy - FirstEnergy Corporation	Mark Garza	1,3,4,5,6		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF
					Robert Loy	FirstEnergy - FirstEnergy Solutions	5	RF
					Mark Garza	FirstEnergy-FirstEnergy	1,3,4,5,6	RF
					Stacey Sheehan	FirstEnergy - FirstEnergy Corporation	6	RF
DTE Energy - Detroit Edison Company	Mohamad Elhusseini	3,5		DTE Energy	Mohamad Elhusseini	DTE Energy	5	RF
					Patricia Ireland	DTE Energy	4	RF
					Marvin Johnson	DTE Energy - Detroit Edison Company	3	RF
Southern Company - Southern Company Services, Inc.	Pamela Hunter	1,3,5,6	SERC	Southern Company	Matt Carden	Southern Company - Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC

					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
					Leslie Burke	Southern Company - Southern Company Generation	5	SERC
Dominion - Dominion Resources, Inc.	Sean Bodkin	5,6		Dominion	Victoria Crider	Dominion Energy	3	NA - Not Applicable
					Sean Bodkin	Dominion Energy	6	NA - Not Applicable
					Steven Belle	Dominion Energy	1	NA - Not Applicable
					Barbara Marion	Dominion Energy	5	NA - Not Applicable
Western Electricity Coordinating Council	Steven Rueckert	10		WECC Entity Monitoring	Steve Rueckert	WECC	10	WECC
					Curtis Crews	WECC	10	WECC
Sacramento Municipal Utility District	Tim Kelley	1,3,4,5,6	WECC	SMUD and BANC	Nicole Looney	Sacramento Municipal Utility District	3	WECC
					Charles Norton	Sacramento Municipal Utility District	6	WECC
					Wei Shao	Sacramento Municipal Utility District	1	WECC
					Foung Mua	Sacramento Municipal Utility District	4	WECC
					Nicole Goi	Sacramento Municipal Utility District	5	WECC
					Kevin Smith	Balancing Authority of Northern California	1	WECC

1. In paragraph 47 of the June 2024 Order, FERC directed NERC to revise EOP-012-2 and/or the definition of Generator Cold Weather Constraint to "ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them." FERC provided several examples of how NERC may meet directives in this paragraph and explained that NERC may address these concerns in an equally efficient and effective manner, provided NERC explains how it addresses FERC's concerns. FERC further directed NERC to remove references to "cost", "reasonable cost", "unreasonable cost" and "good business practices" and to replace them with clear and auditable criteria.

Proposed EOP-012-3 would revise the definition of Generator Cold Weather Constraint and provide a list in Attachment 1 to the standard of situations which would comprise "known" generator constraints, as well as a list of situations which may constitute constraints, depending on the facts and circumstances. In developing this list, the drafting team considered remarks from the November 2024 technical conference and industry comments on prior drafts.

Do you agree that the proposed revisions to the definition of Generator Cold Weather Constraint and addition of Attachment 1 address the FERC directives in paragraph 47? Please provide any additional comments to consider. If you do not agree, please provide your language change suggestions.

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
Duke Energy supports and agrees with EEI comments.	
Likes 0	
Dislikes 0	
Response	

Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	

AES US Renewables support NAGF comments.
While we agree that some of the constraint criteria have been clarified and refined, we are concerned the language used in several of the criteria can be left to interpretation by the Regional Entities. For example, the phrase used in several of the constraint criteria: "comparable types in regions that experience similar winter climate conditions" can be interpreted differently if there is no guidance provided. We request NERC to provide more clarity and consistency via updates in the technical rationale or a CMEP practice guide.

AES US Renewables also supports ACP's comment regarding the first criterion under Known Generator Cold Weather Constraints, particularly on the October 1, 2029 date for wind turbine towers. Additionally, we request that the second date (currently listed as October 1, 2031) be removed. The rationale for this is that commercial operation date of a new wind project can face delays due to multiple factors (eg: supply chain, weather, etc). So,

setting up a second date does not allow flexibility for Generator Owners or developers to account for these delays that are beyond the control of the Generator Owner or developer.	
Likes 0	
Dislikes 0	
Response	
Richard Vendetti - NextEra Energy - 5	
Answer	No
Document Name	
Comment	
NextEra does not agree that the proposed revisions to EOP-012-3 satisfy paragraph 47 of the FERC directive, particularly the language *"Specifically, we direct NERC to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them,"* as there are still many unknowns regarding specific criteria for solar generation. NextEra appreciates the efforts made by the Standard Drafting Team to include additional constraint language for icing on wind turbines, however there should be similar language provided that addresses solar panels. As such, the modifications are not objective and sufficiently detailed so that applicable entities understand what is required of them.	
Likes 0	
Dislikes 0	
Response	
Josh Schumacher - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation Segments 1, 3, 5, 6	
Answer	No
Document Name	
Comment	
Black Hills Corporation agrees with the comments provided by NAGF and EEI.	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	

Comment	
MP agrees with NAGF comments, in that there needs to be a standardized process and documentation to follow to eliminate regional inconsistencies.	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 5,6	
Answer	No
Document Name	
Comment	
Constellation concurs with NAGF comments. In addition, while the revised wording is an improvement over prior revisions, and elements of the "Known" Constraints are sufficiently clear to allow consistent application, many of the Constraint determinations rely on an uncertain "analysis", which while allowing latitude for particulars of each situation, also render the result subject to interpretation and difficult to audit. These uncertainties may be defined through application during the "abeyance" period, or implementation guidance, or by further refinement in a later version of the Standard. Kimberly Turco, on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Alison MacKellar - Constellation - 5,6	
Answer	No
Document Name	
Comment	
Constellation concurs with NAGF comments. In addition, while the revised wording is an improvement over prior revisions, and elements of the "Known" Constraints are sufficiently clear to allow consistent application, many of the Constraint determinations rely on an uncertain "analysis", which while allowing latitude for particulars of each situation, also render the result subject to interpretation and difficult to audit. These uncertainties may be defined through application during the "abeyance" period, or implementation guidance, or by further refinement in a later version of the Standard. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	

Response	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 5,6, Group Name Dominion	
Answer	No
Document Name	
Comment	
Dominion Energy supports the EEI comments but has the folowing additional comments. While Dominion Energy agrees with the revised definition of Generator Cold Weather Constraint, we contginue to have concnerns that the first 9 scenarios listed under “Case-by-case Determinations of Generator Cold Weather Constraints” in Attachment 1 belong in the “Known Generator Cold Weather Constraints”. Each of the scenarios are specific in nature and required to be validated by the CEA and a subjective view by NERC. These scenarios should be expected to be confirmed and approved automatically rather than relying on “interpretation”. The 10th scenario is the only one that is general enough to warrant further review on a case-by-case basis.	
Likes 0	
Dislikes 0	
Response	
Usama Tahir - Seminole Electric Cooperative, Inc. - 1,3,4,5,6	
Answer	No
Document Name	
Comment	
Seminole Electric Cooperative SMEs request sufficient detail on how to adjust missing or invalid data. For example, is the missing/invalid data to be excluded from the dataset? If not, should the data be supplemented or estimated? Will the *Determination of Location’s Extreme Cold Weather Temperature* guide be updated to include specific criterion for adjustment of missing/invalid data?	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
The NAGF notes that the proposed EOP-012-3 Draft #3 does not contain the information necessary to ensure consistent application of the proposed “Known Generator Cold Weather Constraints” or “Case-by-Case Generator Cold Weather Constraints” as shown in Attachment 1. Without sufficient	

details provided to ensure the process is followed consistently across all regions, the end results of the process does not appear to be auditable. As such, it fails to meet the expectations of FERC as well as NERC's Ten Benchmarks of an Excellent Reliability Standard. If NERC continues to move the proposed standard forward, the NAGF asks that NERC staff work with industry to develop a new high-priority Standards Authorization Request to address this and other issues identified by industry to address this and other identified issues.

As currently structured, there is no consideration of the cost versus reliability benefits for investing in hardening generator facilities for extreme cold weather. For example, how will NERC and the CEA evaluate the need to implement freeze protection measures to meet an ECWT of -15.1 degrees with a design minimum of -15 degrees at cost of $20 million to make a change to meet this ECWT? The existing documentation does not provide clarity related to the process, needed information or any level of cost/benefit or other means to determine what is expected to meet compliance.

Likes 0	
Dislikes 0	

Response

Nick Leathers - Ameren - Ameren Services - 1,3,5,6 - MRO,SERC

Answer	No
Document Name	

Comment

Ameren supports EEI's and NAGF's comments, with more support towards NAGF's comments.

Likes 0	
Dislikes 0	

Response

Christine Kane - WEC Energy Group, Inc. - 3,4,5,6, Group Name WEC Energy Group

Answer	No
Document Name	

Comment

WEC Energy Group supports the NAGF comments as submitted.

Likes 0	
Dislikes 0	

Response

Zahid Qayyum - New York Power Authority - 1,3,5,6

Answer	No

Document Name	
Comment	
NYPA supports NAGF Comments.	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	No
Document Name	
Comment	

The ISO/RTO Council (IRC) Standards Review Committee (SRC) (consisting, for purposes of these comments, of CAISO, ERCOT, ISO-NE, PJM, MISO, NYISO, and SPP) appreciates the work undertaken to date. The SRC through these comments responds to NERC's questions as to whether the revised draft of EOP-012-3 adequately addresses FERC's directives. The SRC notes that, for the reasons outlined below, the proposed revisions to the definition of Generator Cold Weather Constraint do not fully address the FERC directives in paragraph 47 of the June 2024 Order. Specifically, the second sentence of the revised definition is inconsistent with paragraph 47 and should be deleted or revised. Additionally, to fully address the Commission's concern that constraint declaration criteria be "sufficiently detailed so that applicable entities understand what is required of them," certain constraint criteria in Attachment 1 need to be accompanied by a detailed, well-documented evaluation process to ensure entities understand what will be required of them and reduce the risk of uneven application of the constraint criteria undermining EOP-012-3's underlying goal of improving winterization across the generating fleet. In order to provide constructive comments for NERC's consideration, the SRC proposes specific recommendations that would address these concerns and bring the proposed standard in line with FERC's directives.

Constraint Definition: The Generator Cold Weather Constraint definition defines a constraint as any condition that would preclude a Generator Owner from implementing freeze protection measures on Generator Cold Weather Critical Components, then goes on to indicate that freeze protection measures include winterization technologies and practices implemented by similarly situated members of the electric industry. This effectively links the concept of a constraint to existing industry practice, but does not provide guidance on how similar an industry peer might need to be in order to be relevant to the entity declaring a constraint. Linking the constraint concept to existing industry practice is inappropriate for a standard like EOP-012-3 that is designed to improve the overall state of winterization across the generation fleet, not merely maintain the winterization status quo.

Even with the list of potential constraints in Attachment 1, the second sentence of the definition does not meet FERC's directive to be objective and sufficiently detailed to enable applicable entities to understand what is required of them. While the SRC recognizes and supports the drafting team's goal of clarifying that unreasonable freeze protection measures are not required, the second sentence of the definition does not achieve this goal, as it gives the impression that the status quo is a sufficient benchmark.

Proposed Remedy: This SRC concern can be addressed by deleting the second sentence of the revised definition and retaining the first sentence, or by revising the second sentence of the definition to replace the link to existing industry practice with a link to freeze protection measure effectiveness. If NERC elects to revise the second sentence, the SRC recommends the sentence be revised to read as follows: "Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would reasonably be expected to result in effective facility performance while operating at the Extreme Cold Weather Temperature."

Attachment 1 Constraint Criteria: While the SRC believes that EOP-012-3's proposed approach of requiring Compliance Enforcement Authority (CEA) review and approval of constraint declarations is a significant improvement over EOP-012-2, two of the example constraints from the *Case-by-case Determinations of Generator Cold Weather Constraints* section of Attachment 1 require additional clarification regarding how NERC will ensure the

Commission's concern that the standard's provisions be "objective and sufficiently detailed so that applicable entities understand what is required of them" is adequately addressed. The SRC outlines its concerns below and proposes as a remedy that, as part of its submission, the NERC Board commits to developing and filing a well-documented, rigorous evaluation process to ensure consistent, objective evaluation of constraints that are based on these two example constraints.

Specifically, constraint declarations that resemble the examples found in items 5.a (accelerated premature retirement of an existing generating unit) and 5.b (cancellation of plans to finish development of a new generating unit) in the *Case-by-case Determinations of Generator Cold Weather Constraints* section of Attachment 1 should be reviewed under a well-documented evaluation process to ensure they meet the FERC directive that constraint criteria provide sufficient detail for applicable entities to understand what is required of them. This evaluation process will need to explain how the CEA will evaluate the following factors for these constraint criteria:

Item 5.a. For item 5.a, the evaluation process will need to address how the CEA will determine how "accelerated" or "premature" a retirement must be in order to qualify as a constraint under this example. It will also need to specify how the CEA will determine that the requirement to implement freeze protection measures was the clear cause of the premature retirement.

To effectively evaluate whether the requirement to winterize would result in an accelerated premature retirement, the CEA could need to examine the cost of the freeze protection measures, forecasts of future energy prices, and commercially sensitive data about unit operating costs and profitability to determine whether winterizing the unit would truly be uneconomic over the unit's future remaining life. Moreover, the analysis could also need to consider the across-the-board electricity price impacts that could result from competitors of that unit attempting to pass through the costs of similar weatherization work. Such price increases could offset the costs of implementing freeze protection measures, making it extremely difficult to effectively review a determination that the requirement to implement the winterization measure would **result** in accelerated premature retirement. Such a review would likely require a complete examination of the projected future profitability of the unit under a range of scenarios.

This degree of economic analysis and forecasting would also involve what could be a highly subjective examination of that unit's competitive position relative to its peers on a forward-looking basis, and the entire process will need to be thoroughly documented to ensure consistency with FERC's directive that constraint declaration criteria be objective and sufficiently detailed so that applicable entities understand what is required of them. Along these same lines, the constraint evaluation process for item 5.a should address how the CEA will determine whether an "acceptable replacement" is available for the unit in question. In competitive markets, this information is highly confidential and market sensitive, which means the Generator Owner declaring the constraint will need clear, detailed guidance on how to make the required showing. The SRC raises these issues to highlight the difficult nature of consistently and objectively applying this evaluation and to emphasize the importance of developing a well-documented evaluation process to ensure consistent application of the exception enabling the intent of EOP-012-3 for improving weatherization across the generation fleet.

Item 5.b. Item 5.b similarly needs a detailed process documenting how the CEA will determine whether implementation of the freeze protection measures would **cause** the Generator Owner to cancel plans to finish development of a new generating unit.

Decisions to cancel a unit could be based on many factors, including changes to the underlying economics of developing the unit. In this case, evaluating the asserted basis for cancelling the development of the planned new generating unit could require the CEA to attempt to forecast future generator revenues while accounting for higher wholesale electricity prices resulting from increased costs faced by other units as a result of installing freeze protection measures. Without clear processes, the CEA could have to examine minutes of board meetings and interview company officials in order to effectively determine whether the decision to cancel the development of the new unit would truly be caused by the requirement to install freeze protection measures instead of some other factor, such as higher interest rates or increased permitting costs (as compared to expected future revenues).

The constraint evaluation process should require more than a simple assertion or attestation that the Generator Owner would prematurely retire the unit or cancel the construction of a new generating unit if required to implement the freeze protection measure in question. Otherwise, it will be difficult to distinguish constraint declarations that truly implicate the existence of a generating unit from those that are driven by a desire to avoid costs that are inconvenient but manageable. Inconsistent application of this example constraint criterion could undermine the goal of ensuring reliability by bringing all generating units up to a minimum winterization level (subject to only a limited set of constraints based on the physical limitations of certain units) based on expected conditions.

To ensure constraint approvals are consistent, the case-by-case considerations for these constraint criteria should be supported by a rigorous, well-documented evaluation process. This would not eliminate the CEA's authority to evaluate special circumstances, rather it would avoid a potential race to the bottom where units could arbitrarily seek constraints, ultimately resulting in a class of partially winterized units with lower operating costs (and

therefore a competitive advantage when they are able to operate) compared to fully winterized units in the same region. Inconsistent application of these constraint criteria could incentivize unit owners to declare these constraints to protect their competitive positions relative to other units. This could be detrimental to reliability, as it could result in uneven winterization of generation units within a region, posing operational challenges for grid operators seeking to manage the grid during extreme cold weather conditions. To help avoid this result, the NERC Board must develop a detailed process explaining how these types of constraint declarations will be evaluated and the types of documentation it will expect Generator Owners to provide to support declarations of these types of constraints. The process should be filed with FERC to provide industry an opportunity to review the process and provide comments on the process before EOP-012-3 goes into effect and Generator Owners begin submitting constraint declarations for review and approval. Given time constraints, the SRC acknowledges that such a filing could be made as a supplemental filing after EOP-012-3 is filed.	
Likes 0	
Dislikes 0	
Response	
Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
See comment to question 8.	
Likes 0	
Dislikes 0	
Response	
Michael Goggin - Grid Strategies LLC - 5	
Answer	No
Document Name	Comments on EOP-012.docx
Comment	
Likes 0	
Dislikes 0	
Response	
Brian Lindsey - Entergy - 1,3,6	
Answer	Yes
Document Name	

Comment	
No Comment	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
AEPC has signed on to ACES comments. See ACES comments.	
Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	

AZPS does not object to the proposed Generator Cold Weather Constraint criteria. AZPS agrees with comments submitted by EEI on behalf of their members listed below that the Section titled Case by Case Determination of Generator Cold Weather Constraints is too subjective and could result in regional inconsistencies.

In paragraph 47, the Commission recognized this concern and suggested that NERC "establish a pre-approval process for all Generator Cold Weather Constraint" and while that process was left to NERC to establish, the Commission was clear that the process needed to provide consistent compliance and enforcement outcomes. The process document titled "Generator Cold Weather Extension and Constraint Process", does not appear to meet the expectations set by the Commission. To address this concern, we suggest modifying the process to include oversite that ensures that Cold Weather Constraints are approved in a manner that makes certain that GO declarations are reviewed and approved consistently across all regions. Also, the process should be enhanced to provide clearer guidance regarding entity submissions to ensure consistency in both entity submissions and CEA assessments. (See EEI comments regarding the Compliance Process in our response to Question 8.)

Likes 0	
Dislikes 0	

Response

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring

Answer	Yes
Document Name	

Comment

WECC supports the development of Attachment 1 and additional materials delivered by the drafting team/321 team in meeting the FERC directives. Industry should work towards providing clarity in freeze protection measures and Generator Cold Weather Critical Components which, effectively, are the basis for a Generator Cold Weather Constraint declaration. It would be beneficial for the ERO Enterprise to consider posting (anonymized) examples of case-by-case determinations of Generator Cold Weather Constraints to support overall industry efforts.

Likes 0	
Dislikes 0	

Response

Hayden Maples - Evergy - 1,3,5,6 - MRO

Answer	Yes
Document Name	

Comment

Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and the North American Generator Forum (NAGF) on question 1

Likes 0	

Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
It is the opinion of ACES that the proposed revisions to Attachment 1 are largely insubstantial changes and overall provide greater clarity over the previous revision.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI does not object to the proposed definition of Generator Cold Weather Constraints or proposed Attachment 1. While we do not object to Attachment 1 and support the list of Known Generator Cold Weather Constraints, the second part of Attachment 1, which includes a Section titled Case by Case Determination of Generator Cold Weather Constraints is too subjective and could result in regional inconsistencies. In paragraph 47, the Commission recognized this concern and suggested that NERC “establish a pre-approval process for all Generator Cold Weather Constraint” and while that process was left to NERC to establish, the Commission was clear that the process needed to provide consistent compliance and enforcement outcomes. The process document titled “Generator Cold Weather Extension and Constraint Process”, does not appear to meet the expectations set by the Commission. To address this concern, we suggest modifying the process to include oversite that ensures that Cold Weather Constraints are approved in a manner that makes certain that GO declarations are reviewed and approved consistently across all regions. Also, the process should be enhanced to provide clearer guidance regarding entity submissions to ensure consistency in both entity submissions and CEA assessments. (See EEI comments regarding the Compliance Process in our response to Question 8.)	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes

Document Name	
Comment	
Southern Company agrees if EEI's "Proposed Language for Review and Comment" concerns are met.	
Likes 0	
Dislikes 0	
Response	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	
PacifiCorp supports MRO-NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mark Flanary - Midwest Reliability Organization - 10	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Devon Tremont - Utility Services, Inc. - 4 - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Scott Thompson - PNM Resources - 1,3,5 - WECC,Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Greg Sorenson - ReliabilityFirst - 10 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	
Document Name	
Comment	
The definition of a cold weather constraint appears unchanged.	
Likes 0	

Dislikes 0	
Response	

2. In paragraph 54 of the June 2024 Order, FERC directed NERC to modify EOP-012-2 "so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner."

To address this directive, proposed EOP-012-3 would require each Generator Owner that declares a constraint to submit it to the CEA for validation (Requirement R8 Part 8.1). Constraints shall be submitted within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable (for new units this time is within 15 days of entering commercial operation). The process for ERO review is addressed separately in an ERO process document.

Do you agree that the modifications in Requirement R8 are responsive to the FERC directive in paragraph 54? If you do not agree, please provide your language change suggestions.

Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
See comment to question 8.	
Likes 0	
Dislikes 0	
Response	

Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	No
Document Name	
Comment	
Requirement R8 is not fully responsive to the FERC directive in paragraph 54. In paragraph 54, the example FERC included to illustrate its intent contemplated NERC or Regional Entity review of both new constraint declarations and changes to existing constraint declarations. However, Requirement R8 does not require NERC or Regional Entity review of changes to existing constraint declarations. To address this omission, the SRC recommends that the following language be added to the end of Requirement R8, Part 8.1: "For changes to existing Generator Cold Weather Constraints, submit within 45 calendar days of identifying the change to the Generator Cold Weather Constraint."	
Likes 0	
Dislikes 0	
Response	

Zahid Qayyum - New York Power Authority - 1,3,5,6	
Answer	No
Document Name	
Comment	
NYPA supports NAGF Comments.	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3,4,5,6, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the NAGF comments as submitted.	
Likes 0	
Dislikes 0	
Response	
Nick Leathers - Ameren - Ameren Services - 1,3,5,6 - MRO,SERC	
Answer	No
Document Name	
Comment	
Ameren supports EEI's and NAGF's comments, with more support towards NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No

Document Name	

Comment

As stated above, FERC does not require NERC to approve the constraint. The CEA has to validate the submitted constraint. The NAGF recommends that NERC modify the proposed standard to ensure NERC is informed of any constraints and confirm the Generator Owner has appropriately addressed all areas of reasonableness.

The NAGF is also concerned that the CEAs do not have the expertise, staff or processes in place to manage this process. Several CEAs currently have a large backlog of compliance and enforcement efforts outstanding. The NAGF is concerned that adding the review and determination of constraints under the needed timeline will cause the backlog to grow even more.

The NAGF has concerns related to interaction between the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process document. While we appreciate that the drafting team added language in the latest version concerning the ability to request a joint NERC and CEA review of a denial of a constraint declaration, this still does not resolve our concern regarding the scenario of a denial of constraint declaration from second NERC and CEA review. Particularly, our concern is in regard to a new project that has reached commercial operation status under R2.2 where no CAP is allowed. The process does not specify next steps that the Generator Owner can take. For example, does the Generator Owner cease operation of a brand-new generation facility to avoid going into non-compliance because the Generator Owner could not get constraint declaration approved? In addition, the process document is not part of EOP-012-3, but there are timelines specified in the process document. It is not clear what happens if the timelines are not followed by the Generator Owner/Operator.

Additionally, the process document only describes the process that should be followed but does not provide the criteria in which the CEA will use to approve/deny a CAP extension or Constraint Declaration. This raises a concern that the CEAs will not be following a consistent set of criteria across the ERO.

Likes 0	
Dislikes 0	

Response

Usama Tahir - Seminole Electric Cooperative, Inc. - 1,3,4,5,6

Answer	No
Document Name	

Comment

Seminole Electric Cooperative requests the standard drafting team to modify the standard to submit to the regional CEA considering the established relationship between Generator Owners and their regional entities.

Likes 0	
Dislikes 0	

Response

Scott Thompson - PNM Resources - 1,3,5 - WECC,Texas RE

Answer	No

Document Name	

Comment

Recommend the following modification of R8.4 (the addition of the word 'if' to the first sentence):

Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event, **if** the cause of Generator Cold Weather Reliability Event is the same as that of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause of the more recent Generator Cold Weather Reliability Event are addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit.

Likes 0	
Dislikes 0	

Response

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators

Answer	No
Document Name	

Comment

It is the opinion of ACES that the timeline identified for new units identified in Requirement R8, part 8.1 bullet point one is unclear. It is not readily apparent to ACES how this requirement applies to any potential Generator Cold Weather Constraint(s) determined after the generating unit(s) began commercial operation.

Furthermore, the term commercial operation is listed in the NERC Glossary of Terms as a WEEC Regional Definition. Is this term meant to have a different application in the WECC region as opposed to other NERC regions?

We recommend striking the WECC Regional Term "Commercial Operation" and adding a new Continent-wide Term "Commercial Operation" with the following definition:

Commercial Operation:

The stage when an Element connected to the Bulk-Power System begins operating under a contractual or regulatory agreement.

Note: This phase typically

- follows initial start-up testing and/or commissioning activities.
- is associated with the ability of the owner/operator of the Element to begin collecting revenue from said Element.

Additionally, we recommend the following modification to Requirement R8 for the sake of clarity:

R8. Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall:

8.1 Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows:

8.1.1 For any Generator Cold Weather Constraint(s) determined prior to a generating unit(s) beginning Commercial Operation (in accordance with Requirement R2), submit no later than fifteen (15) calendar days after beginning Commercial Operation;

Likes 0	
Dislikes 0	
Response	
Alison MacKellar - Constellation - 5,6	
Answer	No
Document Name	
Comment	
Constellation supports comments of NAGF. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 5,6	
Answer	No
Document Name	
Comment	
Constellation supports comments of NAGF. Kimberly Turco, on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	

MP agrees with NAGF – stating CEA's are do not have the expertise, staff, or process to manage validation. The current backlog would likely increase, delaying the approval process.

Likes 0	
Dislikes 0	

Response

Josh Schumacher - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation Segments 1, 3, 5, 6

Answer	No
Document Name	

Comment

Black Hills Corporation agrees with the comments provided by NAGF.

Likes 0	
Dislikes 0	

Response

Richard Vendetti - NextEra Energy - 5

Answer	No
Document Name	

Comment

NextEra does not agree that the proposed revisions to EOP-012-3 satisfy paragraph 47 of the FERC directive, particularly the language *"Specifically, we direct NERC to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them,"* as there are still many unknowns regarding specific criteria for solar generation. NextEra appreciates the efforts made by the Standard Drafting Team to include additional constraint language for icing on wind turbines, however there should be similar language provided that addresses solar panels. As such, the modifications are not objective and sufficiently detailed so that applicable entities understand what is required of them.

Likes 0	
Dislikes 0	

Response

Ruchi Shah - AES - AES Corporation - 5

Answer	No
Document Name	

Comment
AES US Renewables still has concerns about the process described in the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process. Although the timelines listed in the document (eg: no less than 60 calendar days) are considered un-enforceable, we are concerned that this document leaves a lot of room for interpretation by each Regional Entity's team that will be utilizing this document to review and approve CAP Extensions and Constraint Declarations. We do appreciate that there is language added in the latest version concerning the ability to request a joint NERC and CEA review of a denial (applies to both CAP extension and constraint declaration). However, this still does not resolve the concern regarding the second NERC and CEA review resulting in a denial, particularly for a new project that has reached commercial operation status under R2.2 where no CAP is allowed. The process does not specify next steps that the Generator Owner can take. For example, what choices does the Generator Owner have if there are no commercially available solutions to mitigate the freeze protection issue? We request that NERC take these scenarios into account to provide further clarifications or include additional language in the "Generator Cold Weather CAP Extension and Constraint Process" document to make the process clearer, including guidance on next steps when a constraint declaration is denied under R2.2 (after a joint NERC and CEA review) and whether the GO can continue to operate the facility as is. The EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process document also does not have sufficient detailed language to ensure that Cold Weather Constraints declarations would be reviewed consistently across all regions for approvals. Also, since the process falls outside of Reliability Standard EOP-012-3, changes to the defined process may not include industry review and comment. We request that NERC consider addressing consistency concerns as well as clarifying to industry how this document will be enforced or otherwise.

Likes 0	
Dislikes 0	

Response

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	No
Document Name	

Comment
AEPC has signed on to ACES comments. See ACES comments.

Likes 0	
Dislikes 0	

Response

Brian Lindsey - Entergy - 1,3,6	
Answer	No
Document Name	

Comment

Entergy notes that the NERC “Generator Cold Weather CAP Extension and Constraint Process” (Step 2 – ERO Enterprise Review, page 2) requires the CEA to “*complete the review within 45 calendar days of acknowledgement or provide notification to the submitting entity that they are extending the time needed for review*”, but does not limit or cap the amount of time the CEA has to complete the review explicitly, which could result in significant delays.

Likes 0	
Dislikes 0	

Response

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF

Answer	No
Document Name	

Comment

Duke Energy supports and agrees with EEI comments. Additionally, changes to R8 do not support standard language regarding administrative burden for this question. For example, Duke Energy notes that changes to R8, and the associated reasoning provided in the Technical Rationale document for Paragraph 54's directive, to add a timeliness component for the CEA to review constraints does not appear to meet the FERC directive. R8 does not provide guidelines or processes on how the CEA will provide or perform reviews in timely manner.

Likes 0	
Dislikes 0	

Response

Greg Sorenson - ReliabilityFirst - 10 - RF

Answer	Yes
Document Name	

Comment

Agree with modification. Please consider adding language that any findings when reviewing Corrective Action Plans (CAP) should be communicated to the RC, PC, BA, etc.

Likes 0	
Dislikes 0	

Response

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company

Answer	Yes
Document Name	

Comment	
Southern Company agrees with EEI’s concerns and agrees with the statement if EEI's concerns are addressed for Question 2.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI agrees that the modifications made to Requirement R8 are responsive to the directive in paragraph 54 of the FERC Order, however, the language in Requirement R8, subpart 8.4 appears to be incorrectly linked to subpart 8.3 through the addition of the “and” after the Requirement. We additionally suggest some minor non-substantive changes to 8.4 to improve the clarity of this requirement. To address our concerns, we suggest removing the “and” at the end of subpart 8.3 and make the following changes to 8.4 (All changes are in boldface below): **8.3.** If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2; **8.4.** Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event **when:** 8.4.1. **T**he cause of Generator Cold Weather Reliability Event is the same as that of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause of the more recent Generator Cold Weather Reliability Event are **in place; or** 8.4.2. **Covered through an** existing validated Generator Cold Weather Constraint for the same or similar unit.	
Likes 0	
Dislikes 0	
Response	
Hayden Maples - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	

Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI), Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF), and the North American Generator Forum (NAGF) on question 2

Likes 0	
Dislikes 0	

Response

Devon Tremont - Utility Services, Inc. - 4 - NA - Not Applicable

Answer	Yes
Document Name	

Comment

1. Suggest NERC develop a form for submission of constraint declarations so GOs provide all the needed information to expediate the process for the CEA to make a determination on validity.

2. For generation facilities that have repeated Generator Cold Weather Reliability Events during a winter season that fall into the 'known constraint' category in Attachment 1 (e.g., wind turbine blade icing events), does the GO need to file constraint declarations for each occurrence of the same type of Generator Cold Weather Reliability Event?

Likes 0	
Dislikes 0	

Response

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring

Answer	Yes
Document Name	

Comment

WECC supports the development of NERC process by NERC staff and additional materials delivered by the drafting team/321 team in meeting the FERC directives. Industry should be preparing Generator Cold Weather Constraint materials now to prepare for submittal per the timelines noted within the Standard. While each case may have different facts and circumstances the ERO Enterprise should provide further guidance on expectations of material to be provided to support timely review. That effort would benefit the ERO Enterprise and the industry.

Likes 0	
Dislikes 0	

Response

Andrew Smith - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
AZPS agrees that the modifications made to Requirement R8 are responsive to the directive apart from the recently added Subpart 8.4. AZPS is unclear of certain aspects of 8.4 including what the intent or expectation is. It is unclear how this data will be submitted, including applicable timeframes, while also appearing to possibly duplicate reporting of similar events through the Section 1600 Data Request for Generator Cold Weather Data.	
Likes 0	
Dislikes 0	
Response	

Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	

Mark Flanary - Midwest Reliability Organization - 10	
Answer	Yes
Document Name	
Comment	
Please see our comment in question number 7.	
Likes 0	
Dislikes 0	
Response	

Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 5,6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	
Document Name	
Comment	
Tri-State Supports MRO NSRF Comments	
Likes 0	
Dislikes 0	
Response	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	
Document Name	
Comment	

PacifiCorp supports MRO-NSRF comments.

Likes 0	
Dislikes 0	

Response

Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro

Answer	
Document Name	

Comment

BC Hydro appreciates the opportunity to comment and offers the following.

The Generator Cold Weather CAP Extension and Constraint Process sets timeline expectations for CAP extensions, including for the CEA. There could be situations where, if the CEA exceeds the 45-day expectation to approve an extension, the submitting GO would be in potential noncompliance to EOP-012-3 if the extension rejection is received after the initial CAP implementation deadline.

BC Hydro recommends a provision to allow flexibility for compliance enforcement should there be a case where the CAP timetables are exceeded while an extension request is being processed by the CEA.

Likes 0	
Dislikes 0	

Response

Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group

Answer	
Document Name	

Comment

To provide a certainty to this process and ensure that entities have a path to ensure documented compliance MRO NSRF would suggest that this standard include language to allow for “automatic” approval of any request if after 60 days no response has been provided by the ERO. This is similar to how FERC has a 60-day approval if no action taken.

MRO NSRF has concerns that the Generator Cold Weather CAP Extension and Constraint Process may not be enforceable and is subject to change outside of the standard development process. because it is not part of standard EOP-012-3.

To address this, MRO NSRF suggests adding the Generator Cold Weather CAP Extension and Constraint Process as attachment 2 to the standard.

MRO NSRF recommends the following modification of R8.4 (the addition of the word ‘if’ to the first sentence):

Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event, if the cause of Generator Cold Weather Reliability Event is the same as that of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more

corrective actions to address the cause of the more recent Generator Cold Weather Reliability Event are addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit.	
Likes 0	
Dislikes 0	
Response	

3. In paragraph 68 of the June 2024 Order, FERC directed NERC to modify Requirement R7 of EOP-012-2 "to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event". FERC provided an example for how to address this directive, such as to require shorter timeframes for those units that have experienced issues and allow longer timeframes to address similar potential issues across a fleet for those units that have not experienced issues.

In proposed EOP-012-3, requirements for Corrective Action Plans for Generator Cold Weather Reliability Events are combined in Requirement R6. Requirement R6 now includes timeframes for CAP implementation for the unit that experiences the Generator Cold Weather Event (before the next winter season), timeframes for reviewing similar units for the same issue (12 months from the event) and timeframes for implementing CAPs on similar units that were determined to be susceptible to the identified freezing issues (24 months from the review, or 36 months from the event). In developing these modifications, feedback from previous postings of the EOP-012-3 standard were considered.

Do you agree that the modifications in Requirement R6 are responsive to the FERC directive in paragraph 68? If you do not agree, please provide your language change suggestions.

Brian Lindsey - Entergy - 1,3,6	
Answer	No
Document Name	
Comment	
Entergy agrees that the revision generally addresses paragraph 68, but does not agree with utilization of a footnote in section 6.3.5.1 to address an issue that should be included directly in the Standard Requirement. The footnote language is also ambiguous, a more precise wording such as "*events that occur x days prior to December 1 in the current season*" would be preferred.	
Likes 0	
Dislikes 0	
Response	

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	No
Document Name	
Comment	
AEPC has signed on to ACES comments. See ACES comments.	
Likes 0	
Dislikes 0	

Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
MP agrees with NAGF in adding footnote 11 into the last paragraph of 6.1.	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 5,6	
Answer	No
Document Name	
Comment	
Constellation supports comments of NAGF. Kimberly Turco, on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1,5	
Answer	No
Document Name	
Comment	
Reclamation does not agree. Shortening time frames does not alleviate the burden of lack of material, contracting resources, outages or other schedulable items.	
Likes 0	

Dislikes 0	
Response	
Alison MacKellar - Constellation - 5,6	
Answer	No
Document Name	
Comment	
Constellation supports comments of NAGF. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 5,6, Group Name Dominion	
Answer	No
Document Name	
Comment	
Dominion Energy generally supports eei comments but has the following additional comments. Section 6.1 of the proposed standard states: *"The Generator Owner shall **develop** a Corrective Action Plan for the generating unit that experienced a Generator Cold Weather Reliability Event no later than prior to the first day of the first December following the Generator Cold Weather Reliability Event."* Section 6.3.5 requires the CAP to be implemented on the unit that experienced a Cold Weather Reliability Event prior to the first day of the first December following the Event. Since this is the same date, and development of the CAP must occur before the implementation. Dominion Energy recommends that the wording being changed to make the time-tables clear. Dominion Energy recommends combining 6.1 and 6.3 so that the timetables are clear for the unit that experienced a Cold Weather Reliability Event and move the CAP timetables for units affected by the applicability review in 6.2 to that section.	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	No
Document Name	

Comment

We at ACES greatly appreciate the tremendous effort put forth by the drafting team in developing the proposed updates to EOP-012-2 in accordance with the FERC directives.

From the perspective of ACES, the proposed modifications to Requirement R6 are an improvement over previous drafts; however, we believe further refinement would be beneficial. We believe that, as written, the timelines identified in Requirement R6 are too ambiguous and may unduly discriminate against a GO based solely upon the date the generating unit(s) experienced a Generator Cold Weather Reliability Event ("GCWRE").

It is our opinion that any required compliance timelines would be best defined by removing the inherent obscurity associated with using specific calendar days. In short, we recommend using a timeline based solely on a clearly defined quantity of calendar days and removing all references to explicit months and/or days. Please consider the following hypothetical scenarios as an illustration:

- Generating Unit 1, belonging to Entity A, is a 2x1 combined cycle unit.
    - Unit 1 experiences a GCWRE on October 22nd, 2025, due to a previously unknown freezing issue with the steam turbine lube oil polisher.
    - Per the currently proposed version of Requirement R6 Part 6.3.5.1, Entity A has until December 1st, 2026, to develop and implement a CAP.
        - Entity A develops a CAP for Unit 1 in May 2026.
            - During the development of the CAP, Entity A determines that installing new freeze protection measures (heat trace and insulation) on the lube oil polisher will resolve the identified cause of the GCWRE.
- Generating Unit 2, belonging to Entity B, is a 2x1 combined cycle unit.
    - Unit 2 experiences a GCWRE on March 16th, 2026, due to a previously unknown freezing issue with a coalescing filter on the Station Air system.
        - Unit 2's Station Air system is used for both "Service/Plant" Air and "Instrument" Air.
        - Due to the dual-use nature of the Station Air system, a coalescing filter was installed near each air-operated valve throughout the Combined Cycle plant.
    - Per the currently proposed version of Requirement R6 Part 6.3.5.1, Entity B has until December 1st, 2026, to implement a CAP.
        - Entity B develops a CAP for Unit 2 in August 2026.
            - During the development of the CAP, Entity B determines that installing new freeze protection measures (heat trace and insulation) for the coalescing filter drain will resolve the identified cause of the GCWRE; however, as this is a "Balance of Plant (BOP)" system, Entity B also discovers that 35 such devices exist.
    - Entity B implements the CAP for Unit 2 in November 2026.

In the above examples, Entity A is allowed 405 calendar days after the date of the GCWRE to implement a CAP whereas Entity B is only allowed 260 calendar days after the date of the GCWRE. This results in an unequal application of the Reliability Standard by granting Entity A an additional 145 calendar days to complete the same, or substantially similar, compliance activities as Entity B.

It is the viewpoint of ACES that entities should be provided with an EQUIVALENT length of time to complete compliance activities required by a Reliability Standard. We recommend that the timeline in parts 6.1 and 6.3.5.1 be modified to twelve (12) calendar months regardless of when the Generator Cold Weather Event occurs.

Thus, we recommend modifying Requirement R6 as follows (note: for the sake of brevity, any sections without recommended changes have been omitted):

R6.

6.1 The Generator Owner shall develop a Corrective Action Plan for the generating unit that experienced a Generator Cold Weather Reliability Event no later than twelve (12) calendar months following the Generator Cold Weather Reliability Event.

6.3

6.3.5 A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows:

6.3.5.1 For the generating unit experiencing the Generator Cold Weather Reliability Event, no later than twelve (12) calendar months following the Generator Cold Weather Reliability Event.

Likes 0	
Dislikes 0	

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer	No
Document Name	

Comment

The NAGF recommends that Footnote 11 should be moved to be the last sentence of 6.1.

Likes 0	
Dislikes 0	

Response

Christine Kane - WEC Energy Group, Inc. - 3,4,5,6, Group Name WEC Energy Group

Answer	No
Document Name	

Comment

WEC Energy Group supports the NAGF comments as submitted.

Likes 0	
Dislikes 0	

Response

Zahid Qayyum - New York Power Authority - 1,3,5,6

Answer	No
Document Name	

Comment

NYPA supports NAGF Comments.	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	No
Document Name	
Comment	
Tri-State agrees with MRO NSRF Comments	
Likes 0	
Dislikes 0	
Response	
Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
See comment to question 8.	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	Yes
Document Name	
Comment	
The NSRF appreciates the changes made for clarity.	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
Duke Energy supports and agrees with EEI comments.	
Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
R6 could be made even better by including the timelines for corrective action plan implementation in the same section, i.e., move item 6.2 (requirement for implementation of CAP for similar units) to section 6.3.5, so that all the specific timeline requirements for meeting CAPS are together.	
Likes 0	
Dislikes 0	
Response	

Mark Flanary - Midwest Reliability Organization - 10	
Answer	Yes
Document Name	
Comment	
Please see our comments on Question number 4.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
AZPS agrees that the changes are responsive to the FERC directive.	
Likes 0	
Dislikes 0	
Response	
Richard Vendetti - NextEra Energy - 5	

Answer	Yes
Document Name	
Comment	

NextEra further agrees with including non-substantive changes to R8.3, R8.4, including:

8.3. If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2; **and**

8.4. Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event **when:**

The cause of Generator Cold Weather Reliability Event is the same as that of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause of the more recent Generator Cold Weather Reliability Event are **in place; or**

Covered through an existing validated Generator Cold Weather Constraint for the same or similar unit.

Likes 0	
Dislikes 0	
Response	

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring

Answer	Yes
Document Name	
Comment	

WECC supports the development of Requirement R6 language and additional materials delivered by the drafting team/321 team in meeting the FERC directives. However, the change to 36 calendar months for other units in a fleet may not meet FERC's expectations and a 24 calendar month timeline seemed reasonable to WECC. Is there any data available from Winter Storm Uri or Elliot to support the longer timelines?

Likes 0	
Dislikes 0	
Response	

Josh Schumacher - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation Segments 1, 3, 5, 6

Answer	Yes

Document Name	
Comment	
Black Hills Corporation supports the changes made to Requirement R7 and agrees that the changes are responsive to the FERC directives contained in paragraph 68. However, Black Hills Corporation also agrees with the comments provided by NAGF regarding moving Footnote 11 into the verbiage of the Standard.	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Noting the allowance to update an existing CAP in lieu of developing a new one (per Footnote 10 to Requirement R6 and Requirement R9.1), BC Hydro suggests that a similar provision to update an existing CAP also be added to Requirement R7. This would allow increased efficiencies for where a CAP already exists, not just when experiencing an GCWRE subject to Requirement R6 or upon determination of a GCWC declaration where the declaration is no longer valid.	
Likes 0	
Dislikes 0	
Response	
Hayden Maples - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the North American Generator Forum (NAGF) on question 3	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	

Answer	Yes
Document Name	
Comment	
EEI supports the changes made to Requirement R7 and agrees that the changes are responsive to the directives contained in paragraph 68 of the FERC Order.	
Likes 0	
Dislikes 0	
Response	
Nick Leathers - Ameren - Ameren Services - 1,3,5,6 - MRO,SERC	
Answer	Yes
Document Name	
Comment	
Ameren supports EEI's and NAGF's comments, with more support towards NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company supports the changes made to Requirement R7.	
Likes 0	
Dislikes 0	
Response	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	

Comment	
PacifiCorp supports MRO-NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Devon Tremont - Utility Services, Inc. - 4 - NA - Not Applicable	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Scott Thompson - PNM Resources - 1,3,5 - WECC,Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Greg Sorenson - ReliabilityFirst - 10 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

4. In paragraph 70 of the June 2024 Order, FERC directed NERC "to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC." In paragraph 3 of the June 2024 Order, FERC stated that NERC should "ensure that the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension."

In proposed EOP-012-3, Requirement R6 Part 6.4 and Requirement R7 Part 7.2 were added to require any Generator Owner seeking to extend a Corrective Action Plan (CAP) implementation deadline beyond the maximum implementation timeframe, to seek pre-approval of the extension by the CEA. The standard specifies the information that must be included in any submission to allow for this review, including an explanation of the circumstances causing the delay and why those circumstances are beyond the control of the GO, revisions to the CAP in the interim, and an updated timetable for completion.

The drafting team determined that any entities with a need could request information on operating limitations – temporary or otherwise - under the data specification standards (TOP-003, IRO-010), or through other mechanisms for obtaining up-to-date information on the status and availability of generators, and determined to not include a separate requirement for such notifications in EOP-012-3.

Do you agree that the modifications in Requirement R6 Part 6.4 and Requirement R7 Part 7.2 are responsive to the FERC directives above? If you do not agree, please provide your language change suggestions.

Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
See comment to question 8.	
Likes 0	
Dislikes 0	
Response	

Mark Flanary - Midwest Reliability Organization - 10	
Answer	No
Document Name	
Comment	
This comment applies to both R6.4 and R7.2. MRO has concern that there may be a potential issue to enforce the Generator Cold Weather CAP Extension and Constraint Process because it is a separate document/process outside of the standard language. Specifically, MRO is concerned that the 60-day recommendation in this document is not enforceable. To provide clarity and enforceability, MRO recommends either including the Generator	

Cold Weather CAP Extension and Constraint Process in the standard, for example, as an Attachment 2 OR “no later than 60-day” requirement stated in the process should be explicitly included in the requirement language.	
Likes 0	
Dislikes 0	
Response	
Brian Lindsey - Entergy - 1,3,6	
Answer	No
Document Name	
Comment	
The language does require the GO to seek approval from the CEA, but neither section 6.4 nor 7.2 explicitly requires the GO to "inform relevant registered entities" of operating limitations during the extension. The Standard also fails to specify which registered entities would be considered "relevant" or provide guidance on the notification process.	
Likes 0	
Dislikes 0	
Response	
Greg Sorenson - ReliabilityFirst - 10 - RF	
Answer	Yes
Document Name	
Comment	
Agree with modification. Please consider adding language that any findings when reviewing Corrective Action Plans (CAP) should be communicated to the RC, PC, BA, etc.	
Likes 0	
Dislikes 0	
Response	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	

PacifiCorp supports MRO-NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company agrees the modifications in R6 and R7 are responsive to the FERC directives in paragraph 70.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI agrees that the modifications in Requirement R6, subpart 6.4 and Requirement R7, subpart 7.2 are responsive to the FERC directives in paragraph 70.	
Likes 0	
Dislikes 0	
Response	
Alison MacKellar - Constellation - 5,6	
Answer	Yes
Document Name	
Comment	

Constellation supports comments of NAGF.

Alison Mackellar on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Devon Tremont - Utility Services, Inc. - 4 - NA - Not Applicable

Answer	Yes
Document Name	

Comment

Suggest that this standard include language to allow for “automatic” approval of any request if after 15 days no response has been provided by the CEA. This is similar to how FERC has a 60-day approval if no action taken. USV understands that timelines are established within the Generator Cold Weather CAP Extension and Constraint Process, however, this may be better understood if included within the standard itself.

To address this, USV suggests, as a minimum, adding the Generator Cold Weather CAP Extension and Constraint Process as attachment 2 to the standard.

Likes 0	
Dislikes 0	

Response

Kimberly Turco - Constellation - 5,6

Answer	Yes
Document Name	

Comment

Constellation supports comments of NAGF.

Kimberly Turco, on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
MP agrees. This mechanism for a CAP extension.	
Likes 0	
Dislikes 0	
Response	
Josh Schumacher - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation Segments 1, 3, 5, 6	
Answer	Yes
Document Name	
Comment	
Black Hills Corporation agrees that the modifications in Requirement R6, subpart 6.4 and Requirement R7, subpart 7.2 are responsive to the FERC directives in paragraph 70.	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
WECC supports the development of the extension language in Requirements R6 and R7 and additional materials delivered by the drafting team/321 team in meeting the FERC directives.	
Likes 0	
Dislikes 0	
Response	

Richard Vendetti - NextEra Energy - 5	
Answer	Yes
Document Name	
Comment	
NextEra agrees that the modifications in Requirement R6 Part 6.4 and Requirement R7 Part 7.2 are responsive to the FERC directives above.	
Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
AZPS agrees that the changes are responsive to the FERC directive.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes

Document Name	
Comment	
Duke Energy supports and agrees with EEI comments.	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Zahid Qayyum - New York Power Authority - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3,4,5,6, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nick Leathers - Ameren - Ameren Services - 1,3,5,6 - MRO,SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Scott Thompson - PNM Resources - 1,3,5 - WECC,Texas RE	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Hayden Maples - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 5,6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	

5. Paragraph 72 June 2024 Order, FERC stated: "[W]e…find that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation." FERC directed NERC to develop and submit modifications to Requirement R7, Reliability Standard EOP-012-2 to clarify that any Requirement R7 Corrective Action Plans (CAPs) for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

To remove the CAP option from new generation entering commercial operation on or after October 1, 2027, which is consistent with the original EOP-012-1 standard. The drafting team chose to allow a limited CAP option for certain generators whose design criteria were finalized prior to the first version of the EOP-012 standard being approved, and that will come into commercial operation during the first winter the more stringent requirements for new generation are in effect (i.e. winter 2027-2028). These units would be allowed the option to enter commercial operation and complete any required CAPs by April 1, 2028.

To address industry comments on previous drafts, further clarification is made in Requirement R6 as to scope and applicability and to confirm no retroactive applicability is intended, and additional supporting rationale for the selected bookend dates is provided in the Technical Rationale.

Do you agree that the modifications in EOP-012-3 Requirement R2 are responsive to the FERC directives? If you do not agree, please provide your language change suggestions.

Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
In Manitoba, EOP-012-1 will not be effective until 2030. The language and dates still create confusion for our effective date. For instance if we contractually commit to design criteria in 2028 and do not enter commercial operation before 2030 its unclear if R2 is enforceable. Regardless we normally operate in cold weather and design for long cold winters.	
Likes 0	
Dislikes 0	
Response	

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	No
Document Name	

Comment
AEPC has signed on to ACES comments. See ACES comments.

Likes 0	
Dislikes 0	

Response

Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	

Comment
While AES US Renewables appreciates the additional clarification provided under R2.1 and the intent of the February 16, 2023 date, we want to repeat that we do not agree that compliance date should be aligned to a regulatory approval date that is not widely known. The industry as a whole relies on the NERC published implementation plan of EOP-012-1 as that is usually what registered entities are held accountable to. In the case of EOP-012-1's implementation plan, the effective date is supposed to be 10/1/2024. Therefore, we request that the drafting team revise the June 29, 2023 date to October 1, 2024.

Likes 0	
Dislikes 0	

Response

Kimberly Turco - Constellation - 5,6	
Answer	No
Document Name	

Comment
Constellation generally supports comments of NAGF regarding the dates of commercial operation, i.e., that there may be generators that establish design criteria and go commercial outside of the dates established in the Standard. Constellation recognizes that the window of concern ends in 2027, i.e., in a relatively short time, and that a period of abeyance may allow such exceptions to exist as necessary until the limiting time of 2027 is past. However, absence a period of abeyance, the current wording may result in inadvertent exclusion of some generators from the Standard Requirements. Kimberly Turco, on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Alison MacKellar - Constellation - 5,6	
Answer	No
Document Name	
Comment	

Constellation generally supports comments of NAGF regarding the dates of commercial operation, i.e., that there may be generators that establish design criteria and go commercial outside of the dates established in the Standard. Constellation recognizes that the window of concern ends in 2027, i.e., in a relatively short time, and that a period of abeyance may allow such exceptions to exist as necessary until the limiting time of 2027 is past. However, absence a period of abeyance, the current wording may result in inadvertent exclusion of some generators from the Standard Requirements.

Alison Mackellar on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	
Response	

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	No
Document Name	
Comment	

It is the opinion of ACES that the current language of Requirement 2.1 is only partially responsive to paragraph 72 of the FERC directive. Furthermore, it is our opinion that by including an additional date provision to Part 2.1, the applicability of this part is more confusing than ever.

Additionally, considering the newly added “commercial operation” date range of 10/01/2027-03/21/2028 for applicability, an April 1, 2028, CAP deadline seems at best arbitrary. As written, an entity falling under this provision may only have one (1) calendar day to comply. In this hypothetical one (1) calendar day scenario, what is the point of establishing a CAP process at all?

Paragraph 72 of the FERC directive does not explicitly require a corrective action plan (“CAP”), merely that, if a CAP is needed, “…it should be completed by the time that such generating units go into commercial operation.” We contend that by directing that a CAP must be completed prior to beginning commercial operations, FERC has rendered the formalized CAP process both superfluous and moot for Requirement R2.

In brief, ACES recommends removing the date of demarcation entirely and striking any provisions for a CAP from Requirement R2.

However, if the industry is unwaveringly committed to including a conditional provision for including a CAP process, then, in the opinion of ACES, the date of demarcation for contractual commitments is best defined by the effective date of EOP-012-2. It is our perspective that Implementation Plans are a useful and valuable tool that provide the industry with time to interpret and implement any required compliance actions or activities.

Succinctly stated, it is our opinion that the SDT should NOT break from established precedent by tying compliance date(s) to the governmental authority approval date in lieu of the effective date of the NERC Reliability Standard.

To comply with the FERC directive, ACES recommends using language that is substantially similar to EOP-012-2 as demonstrated below:

R2. Applicable to generating units that begin commercial operation on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below thirty-two (32) degrees Fahrenheit (zero (0) degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of thirty-two (32) degrees Fahrenheit (zero (0) degrees Celsius), shall either:

2.1 Prior to beginning commercial operations, implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (thirty-two (32) km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or

2.2 Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

Likes 0	
Dislikes 0	

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer	No
Document Name	

Comment

The NAGF recommends that the Standard Committee delete the last phrase from R2.1 "and which enter commercial operation between October 1, 2027 and March 31, 2028". Otherwise, a generator that signed agreements in 2022 and goes commercial in June 2028 has no obligation under R2 or R3. This is a clear example of why the NERC Standards Development Process is structured to allow a reasonable time for discussion and review of a proposed standard. Time is required to meet the expected level of excellent standards, as detailed in NERC' Ten Benchmarks of an Excellent Reliability Standard. FERC's continued insistence on deadlines that cause NERC to shortcut the development process are resulting in subpar, problematic standards.

Likes 0	
Dislikes 0	

Response

Nick Leathers - Ameren - Ameren Services - 1,3,5,6 - MRO,SERC

Answer	No
Document Name	

Comment

Ameren supports EEI's and NAGF's comments, with more support towards NAGF's comments.

Likes 0	
Dislikes 0	

Response	
Christine Kane - WEC Energy Group, Inc. - 3,4,5,6, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy group supports the NAGF comments as submitted.	
Likes 0	
Dislikes 0	
Response	
Zahid Qayyum - New York Power Authority - 1,3,5,6	
Answer	No
Document Name	
Comment	
NYPA supports NAGF Comments.	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	No
Document Name	
Comment	
The modifications to Requirement R2 are not fully responsive to the FERC directives. Requirement R2, Part 2.1 allows certain generating units that enter commercial operation between October 1, 2027, and March 31, 2028, to develop, implement, and complete a CAP by April 1, 2028. This is contrary to FERC's directive that generators that are commercially operational after October 1, 2027, should complete any necessary CAP by the time they go into commercial operation and that any CAPs under Requirement R2 must be completed before the generating unit's commercial operation date. Fully complying with FERC's directive would require revising the second bullet point in Part 2.1 as follows: "Develop, implement, and complete by ***the earlier of*** April 1, 2028, ***or the generating unit's commercial operation date*** a Corrective Action Plan . . . ."	
Likes 0	

Dislikes 0	
Response	
Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
See comment to question 8.	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	No
Document Name	2024-03_BCHydro_Comments_EOP-012-3_321_Question5_2025-03-07.pdf
Comment	

(1) The addition of June 29, 2023 to Requirement R2 Part 2.1 creates a potential gap. Generating units that may have their design criteria committed before June 29, 2023 and will enter commercial operation on or after April 1, 2028 do not appear to be subject to the proposed EOP-012-3 R2. Suggest revising to close this potential gap.

The following table may provide further clarification:

Commercial operation	**Design before June 29, 2023**	**Design after June 29, 2023**
Before October 2027	R3	R3
October 2027 – March 2028	R2 Part 2.1	R2 Part 2.2
After March 2028	No Requirement	R2 Part 2.2

(2) Requirement R2 Footnote 4 allows non-U.S. jurisdictions the use of the date the applicable government authority in the relevant jurisdiction approved the first version of the EOP-012 Reliability Standard and the definition of Extreme Cold Weather Temperature. However, there are no similar provisions for the “first winter” period.

BC Hydro requests that similar flexibility to that granted to non-U.S. jurisdictions for the June 29, 2023 design criteria date also be afforded for CAP(s) implementation timelines. This will allow flexibility to align with their regulatory approval processes.

Likes 0	

Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
Duke Energy supports and agrees with EEI comments.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
AZPS agrees that the changes are responsive to the FERC directive.	
Likes 0	
Dislikes 0	
Response	

Richard Vendetti - NextEra Energy - 5	
Answer	Yes
Document Name	
Comment	
NextEra agrees that the modifications in EOP-012-3 Requirement R2 are responsive to the FERC directives.	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
WECC supports the development of Requirement R2 language and additional materials delivered by the drafting team/321 team in meeting the FERC directives.	
Likes 0	
Dislikes 0	
Response	
Josh Schumacher - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation Segments 1, 3, 5, 6	
Answer	Yes
Document Name	
Comment	
Black Hills Corporation does not object to the modifications made to Requirement R2.	
Likes 0	
Dislikes 0	
Response	

Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
MP agrees, however NAGF identifies a compliance gap that could lead to generators not falling under the standard.	
Likes 0	
Dislikes 0	
Response	
Hayden Maples - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) and the North American Generator Forum (NAGF) on question 5	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI does not object to the modifications made to Requirement R2.	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	

Answer	Yes
Document Name	
Comment	
Southern Company agrees with EEI’s position on Requirement R2.	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mark Flanary - Midwest Reliability Organization - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Devon Tremont - Utility Services, Inc. - 4 - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 5,6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Scott Thompson - PNM Resources - 1,3,5 - WECC,Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Greg Sorenson - ReliabilityFirst - 10 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	
Document Name	
Comment	

MRO NSRF believes that this should be the date that a standard became effective which brought the term ECWT became part of a Reliability Standard that is Subject to Enforcement, which occurred when EOP-012-2 became effective on 10/1/2024 for US Entities.

While this change would not have a substantial material impact on the implementation of this standard, using dates that are not determined by the Standard Drafting Process as part of Standard language adds a level of uncertainty that may have negative repercussions for entities moving forward in many areas. One such area is the wording of contractual obligations for building new or modifying existing facilities.

There is a difference in the dates between R7 and Attachment 1.

Attachment 1

Individual wind turbine towers manufactured prior to October 1, 2029, that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per

Requirement R1 for generating units that began commercial operation prior to October 1, 2031.

MRO NSRF suggests a single timeline to avoid confusion, utilizing the language from Attachment 1.

Likes 0	
Dislikes 0	

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer	
Document Name	

Comment

Since the change was made to add verbiage in Requirement Part 2.1, Texas RE recommends revising Requirement R7 to include Requirement R2 (change in bold):

R7. Each Generator Owner that is required to develop a Corrective Action Plan under Requirements R1, **R2**, R3, or R9 shall develop and implement the Corrective Action Plan in accordance with the following:

Likes 0	
Dislikes 0	

Response

Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6

Answer	
Document Name	

Comment

PacifiCorp supports MRO-NSRF comments.

Likes 0	
Dislikes 0	

Response

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5

Answer	
Document Name	
Comment	
Tri-State Supports MRO NSRF Comments	
Likes 0	
Dislikes 0	
Response	

6. In paragraph 76 of the June 2024 Order, FERC directs NERC to remove ambiguities in the Corrective Action Plan implementation plan timelines. As an example, FERC cites the timelines for new, compared to existing, freeze protection measures.

Requirement R7 was revised to clarify that actions to address issues with existing measures must be completed within 24 months, regardless of any longer timeframes for new measures. Requirements for Corrective Action Plans for Generator Cold Weather Reliability Events are discussed in further detail above. Do you agree that the edits are responsive to the FERC directive in paragraph 76? If you do not agree, please provide your language change suggestions.

Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
See comment to question 8.	
Likes 0	
Dislikes 0	
Response	

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	No
Document Name	
Comment	
Tri-State supports MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	

Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	No
Document Name	
Comment	
PacifiCorp supports MRO-NSRF comments.	

Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1,5	
Answer	No
Document Name	
Comment	
Reclamation does not agree. Shortening time frames to 24 months does not alleviate the burden of lack of material, contracting resources, outages or other schedulable items.	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
CAPs and implementation should be at the discretion of utilities that normally operate reliably during seasonal cold weather.	
Likes 0	
Dislikes 0	
Response	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	
Regarding R6.5, this requirement creates a variable time frame from 8 months to 13 months. A generator experiencing a cold weather event in February only has 8 months to develop a CAP whereas a unit experiencing a cold weather event in October has 13 months to develop a CAP.	

MRO NSRF suggests that requiring all CAPs have the same fixed time frame for development and completion would still address the issue while also providing timing certainty to entities, for example the requirement could state that CAPs need to be completed within 12 calendar months from the occurrence of the Generator Cold Weather Reliability Event.	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Yes, Southern Company agrees with the modifications made to R7.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI agrees that the modifications made to Requirement R7 are sufficiently clear and align with the FERC directives in paragraph 76.	
Likes 0	
Dislikes 0	
Response	
Hayden Maples - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	

Evergy supports and incorporates by reference the comments of the Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) on question 6	
Likes 0	
Dislikes 0	
Response	
Alison MacKellar - Constellation - 5,6	
Answer	Yes
Document Name	
Comment	
Constellation supports comments of NAGF. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 5,6	
Answer	Yes
Document Name	
Comment	
Constellation supports comments of NAGF. Kimberly Turco, on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Josh Schumacher - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation Segments 1, 3, 5, 6	
Answer	Yes

Document Name	
Comment	
Black Hills Corporation agrees that the modifications made to Requirement R7 are sufficiently clear and align with the FERC directives in paragraph 76.	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
WECC supports the development of language for Requirement R7 and additional materials delivered by the drafting team in meeting the FERC directives. The additional clarity provided in the Technical Rationale around “new” and “existing” freeze protection measures should minimize issues associated with extension requests if used effectively by industry. However, if we are reading the requirment correctly, it creates a variable time frame from 8 months to 13 months. A generator experiencing a cold weather event in February would only have 8 months to develop a CAP whereas a unit experiencing a cold weather event in October would have 13 months to develop a CAP. Would it not be more consistent if all CAPs had the same fixed time frames, say one year from the occurrence orf the CWRE?	
Likes 0	
Dislikes 0	
Response	
Richard Vendetti - NextEra Energy - 5	
Answer	Yes
Document Name	
Comment	
NextEra agrees that the edits are responsible to the FERC directive in paragraph 76.	
Likes 0	
Dislikes 0	
Response	

Andrew Smith - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
AZPS agrees that the changes are responsive to the FERC directive.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Mark Flanary - Midwest Reliability Organization - 10	
Answer	Yes
Document Name	
Comment	
MRO recommends that all CAPs to have a fixed period for development and completion instead of creating variable periods.	
Likes 0	
Dislikes 0	
Response	
Brian Lindsey - Entergy - 1,3,6	

Answer	Yes
Document Name	
Comment	
No Comment	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
Duke Energy supports and agrees with EEI comments.	
Likes 0	
Dislikes 0	
Response	
Greg Sorenson - ReliabilityFirst - 10 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Zahid Qayyum - New York Power Authority - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3,4,5,6, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nick Leathers - Ameren - Ameren Services - 1,3,5,6 - MRO,SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Scott Thompson - PNM Resources - 1,3,5 - WECC,Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 5,6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Devon Tremont - Utility Services, Inc. - 4 - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

7. In paragraph 94 of the June 2024 Order, FERC directs NERC "to develop and submit modifications to Requirement R8, Part 8.1 of proposed Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations" (i.e. more frequent than every five years) "to verify that the declaration remains valid".

In proposed EOP-012-3, new Requirement 9 was created to require a review of each constraint at least once every 36 calendar months. In establishing this timeframe, the drafting team considered feedback provided on appropriate periodicities and sought to balance the burdens of more frequent reviews with the benefit to reliability of implementing new technologies as they become available. Do you agree that the modifications reflected in new Requirement R9 are responsive to the FERC Directives? If you do not agree, please provide your language change suggestions.

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	

Comment

Duke Energy supports and agrees with EEI comments with the following enhancements:

9.1. If a Generator Cold Weather Constraint is determined "upon review" to be no longer needed "or requires modification", then within six (6) calendar… These improvements are needed to address not only the removal of constraints that are no longer necessary, but also the modifications of constraints whose reviews determine scope changes.

Likes 0	
Dislikes 0	

Response

Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	No
Document Name	

Comment

Shortening the review period to at least once every 36 calendar months is not adequately responsive to the FERC directive. Paragraph 94 is clear that FERC's underlying goal is to incentivize timely adoption of new freeze protection methodologies, even at the cost of additional administrative burden to the Generator Owner. A 36-month review period allows for substantial lag between the availability of a new freeze protection technology and the evaluation and adoption of that technology, particularly if the technology first becomes available shortly after the completion of a 36-month review. To address this issue and more fully implement FERC's directive, the SRC recommends that Requirement R9 be revised as follows to require Generator Owners to react to knowledge of changed circumstances that comes by way of regulatory entities outside of the 36-month review cycle, such as any guidance NERC or FERC might issue as part of their oversight of the constraint declaration process and monitoring of the technological state of freeze protection measures in the industry:

"The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. ***The Generator Owner shall also review each Generator Cold Weather Constraint declaration validated by the CEA upon receiving notification from a regulatory authority with jurisdiction over the Generator Owner of a***

material change in the circumstances that formed the basis for the Generator Cold Weather Constraint declaration to determine if it remains valid in accordance with Attachment 1."

Finally, the SRC recommends that Requirement R9 be revised to require the Generator Owner to submit the results of each constraint review to the CEA. This would provide the CEA additional insight into the overall state and usage of constraints within the industry, and may help the CEA stay informed of the overall pace of changes to freeze protection technology within the industry. It would also help NERC maintain a database of best practices and technological advancements.

Likes 0	
Dislikes 0	

Response

Marty Hostler - Northern California Power Agency - 3,4,5,6

Answer	No
Document Name	

Comment

See comment to question 8.

Likes 0	
Dislikes 0	

Response

Brian Lindsey - Entergy - 1,3,6

Answer	Yes
Document Name	

Comment

No Comment

Likes 0	
Dislikes 0	

Response

Mark Flanary - Midwest Reliability Organization - 10

Answer	Yes

Document Name	
Comment	
MRO recommends clarifying R8.4. The sentence is excessively long and therefore susceptible to causing confusion. MRO recommends breaking the sentence into bullets. In its current form, it is hard to understand what R8.4 is trying to address or its objective.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
AZPS agrees that the changes are responsive to the FERC directive.	
Likes 0	
Dislikes 0	
Response	
Richard Vendetti - NextEra Energy - 5	
Answer	Yes
Document Name	
Comment	

NextEra agrees that the modifications reflection in new Requirement R9 are responsive to the FERC directives. NextEra further aligns with EEI's proposed modifications below:

9.1. If a Generator Cold Weather Constraint is determined to be no longer **valid needed**, then within six (6) calendar months of such determination, the Generator Owner shall **develop or notify the CEA that the update** Corrective Action Plan **is no longer required and submit updates in conformance with that determination** pursuant to Requirement R7.

Likes 0	
Dislikes 0	

Response

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring

Answer	Yes
Document Name	

Comment

WECC supports the development of language for Requirement R9 and additional materials delivered by the drafting team in meeting the FERC directives.

Likes 0	
Dislikes 0	

Response

Josh Schumacher - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation Segments 1, 3, 5, 6

Answer	Yes
Document Name	

Comment

However, Black Hills Corporation agrees with the suggested changes to subpart 9.1 provided by EEI.

Likes 0	
Dislikes 0	

Response

Kimberly Turco - Constellation - 5,6

Answer	Yes
Document Name	
Comment	
Constellation supports comments of NAGF. Kimberly Turco, on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Alison MacKellar - Constellation - 5,6	
Answer	Yes
Document Name	
Comment	
Constellation supports comments of NAGF. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company agrees with the proposed changes suggested by EEI in response to this question.	
Likes 0	
Dislikes 0	
Response	

Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruchi Shah - AES - AES Corporation - 5	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Devon Tremont - Utility Services, Inc. - 4 - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 5,6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Hayden Maples - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Scott Thompson - PNM Resources - 1,3,5 - WECC,Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Nick Leathers - Ameren - Ameren Services - 1,3,5,6 - MRO,SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3,4,5,6, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Zahid Qayyum - New York Power Authority - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Greg Sorenson - ReliabilityFirst - 10 - RF	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	
Document Name	
Comment	
EEI does not object to the intent of the proposed modifications contained in Requirement R9 or its alignment to the directives contained in paragraph 94. However, the proposed language in subpart 9.1 is not sufficiently clear and suggest the following non-substantive changes to clarify the intent of subpart 9.1 (changes in boldface): **9.1.** If a Generator Cold Weather Constraint is determined to be no longer **needed**, then within six (6) calendar months of such determination, the Generator Owner shall **notify the CEA that the** Corrective Action Plan **is no longer required and submit updates in conformance with that determination** pursuant to Requirement R7.	
Likes 0	
Dislikes 0	
Response	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	
Document Name	
Comment	
PacifiCorp supports MRO-NSRF comments.	
Likes 0	
Dislikes 0	
Response	

8. Under Section 321.5.1 of the NERC Rules of Procedure, the Board of Trustees is to consider whether any proposed standard developed under that section is practical, technically sound, technically feasible, cost-justified and serves the best interests of reliability of the Bulk Power System, among other things. Considering the FERC directives provided above, please provide any other comments you wish the Board of Trustees to consider in whether to adopt proposed Reliability Standard EOP-012-3.

Marty Hostler - Northern California Power Agency - 3,4,5,6

Answer	
Document Name	

Comment

Proposed modifications to NERC reliability standard EOP-012-2 requires some GOs (not all) that experience a Cold Weather Reliability Event, to develop a Corrective Action Plan CAP (without considering cost), and obtain approval of their CAP from their Regional Entity (RE).

This proposal and the current version are only applicable to GOs that are required to operate at any temperature below, or equal to, 32-degrees F. But, it is not applicable to GOs that are not required to operate below 32-degrees F. Furthermore, the standard footnote 9, in summary says GOs that are not required to operate at or below 32-degrees are exempt from this requirement, but maybe be called to operate anyway, without making any modifications to their Facilities and they do not have to develop a CAP if they have a Cold Weather Reliability Event.

First off, the standard lacks clarity as to who decides if a unit is required to operate during Cold Weather, FERC, NERC, the RE, the BA, the RC?

The current version of the standard and this proposal violates of the NERC Marketing Principle that states: A reliability standard shall not give any market participant an unfair competitive advantage. It requires some GOs to spend personnel time and money, along with capital dollars which increases their costs and thus market bid pricing 24/7. While others GOs are allowed to operate under the exact same operating weather conditions 24/7 and not have to spend or do anything.

NERC, by developing the current standard and endeavoring to make modifications to this standard, are making a Reliability must be available to run standard. By making requirements that force some GOs Facilities to be available, not just at their design temperature, but at newly calculated CCWTs.

This standard and NERCs proposed modifications to it, has requirements that make it a Resource Adequacy based standard. Thus, it violates the NERC marketing principle that states: Standards shall not define an adequate amount of, or require expansion of, bulk power system resources or delivery capability. NERC is forcing some GOs to increase their operating temperature ranges in order to increase delivery capability during Cold Weather periods.

There is no transparency since there is no provision to make available anonymized CAPs. NERC needs to make all entities CAPs available to all GOs. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. If NERC shared anonymized CAPs, it would not be violating the NERC Market Principle that states: A reliability standard shall not require the public disclosure of commercially sensitive information.

Likes 0	
Dislikes 0	

Response

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5

Answer	
Document Name	

Comment	
Tri-State supports MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	
Document Name	
Comment	
PacifiCorp supports MRO-NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	
Document Name	
Comment	
The IRC SRC recommends that the Compliance Abeyance Period language in C.1.4 of the standard be revised to require entities that failed to correctly calculate the Extreme Cold Weather Temperature despite acting in good faith to complete a mitigation plan to correct the identified deficiencies. This will help enhance the overall efficacy of the standard, as the Extreme Cold Weather Temperature is a linchpin of the standard, and incorrect calculations have the potential to significantly undermine effective winterization of generation units.	
Likes 0	
Dislikes 0	
Response	
Zahid Qayyum - New York Power Authority - 1,3,5,6	
Answer	
Document Name	

Comment	
NYPA supports NAGF Comments.	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	
Document Name	
Comment	
Southern Company agrees with EEI's comments on Questions 8 recognizing NERC needs a standardized form to include all entities in North America.	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3,4,5,6, Group Name WEC Energy Group	
Answer	
Document Name	
Comment	
WEC Energy Group supports the comments of the NAGF as submitted.	
Likes 0	
Dislikes 0	
Response	
Nick Leathers - Ameren - Ameren Services - 1,3,5,6 - MRO,SERC	
Answer	
Document Name	
Comment	

Ameren supports EEI's and NAGF's comments, with more support towards NAGF's comments.

Likes 0	
Dislikes 0	

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer	
Document Name	

Comment

The NAGF believes that the proposed standard needs to include a cost/benefit evaluation or similar methodology to determine if a constraint is justified. This issue was raised by the NAGF during the technical conference and to this date, there has been no discussion of what is a reasonable cost justified threshold. The NAGF views this extreme cold weather issue as just another form of the resource adequacy issue and therefore should be treated as such. The ultimate goal of this standard is to ensure that the resources exist to meet the loads. We note that there is not a standard addressing how to meet peak loads if there is not sufficient capacity, but we are putting a requirement of the Generator Owners to ensure their resources perform without any means to pay for the costs that may be incurred to upgrade existing generation.

The NAGF notes that the proposed standard is not a design criterion. A design criterion would state that a generator that meets the design requirement, such as under R2 and R3, would not be at risk of a Corrective Action Plan due to a “freeze” event after running for 48 hours at a temperature below the ECWT and then experiences a GCWRE as temperatures begin to slowly warm. Regardless of any language in the Requirements, as currently structured, the number of hours operated below the generator’s ECWT does not matter. This failure in the structure of the standard means it is not practical, technically sound or technically feasible. This issue must be addressed in the SAR discussed under Question 1 above.

Specific Requirement Issues:

Requirement 8.3 does not provide a means to appeal the CEA’s decision that a constraint is invalid. NERC and the regions have suggested that the appeals process for a potential non-compliance would be available. The NAGF recommends that R8.3 be revised accordingly to address this issue.

In Requirement R1.1, the SDT made a change that is not addressing the FERC order and NAGF believes this change cause more uncertainty and therefore should be removed: “and adjustments utilized for missing or invalid hourly temperature data, if necessary,”.

The NAGF requests that this language be removed and be replaced with more accurate and clear language under the efforts of the SAR discussed in Question 1.

Finally, the NAGF is concerned that NERC and the CEAs may not have the necessary expertise needed to determine if a constraint is valid or not. The NAGF suggests that the RSTC be assigned the review of declared constraints and the associated validity of them. The RSTC can assign this obligation to a subcommittee (either existing or stood up for this express purpose) as the RSTC is the recognized experts on technical matters at NERC.

Likes 0	
Dislikes 0	

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer	
Document Name	

Comment

EEI would like to note our appreciation for the changes made to EOP-012 that addressed the concerns cited in our earlier comments and those by our members during the technical conference. Additionally, EEI provides the following comments:

Concern: EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process Document

General Comment: While EEI appreciates the improvements made to the Generator Cold Weather CAP Extension and Constraint Process document, we do not agree that supporting process documents developed for EOP-012-3 should be outside of the approved Reliability Standard. The changes within process documents have direct impacts on entity compliance and any change to a process document that directly or indirectly impacts responsible entities compliance should be included in the Reliability Standard. Our concerns with this specific process document are as follows:

Enforceable Requirements Not Identified in EOP-012-3

1. Cap Extension Request Review Process: It states that "If a registered entity has determined that a Corrective Action Plan (CAP) developed in accordance with EOP- 012-3 Requirements R6 or R7 cannot meet the timetable provided per R6 Part 6.3 or R7 Part 7.1, then the entity will submit an extension request to the ERO Enterprise for approval no less than 60 calendar days prior to the original required CAP completion date." See Process Overview & Step 1

- While EEI does not object to the requirement, there is nothing in the requirements of EOP-012-3 that aligns this deadline. Moreover, it is unclear how this could be effectively enforced without it being included in EOP-012-3.

2. Step 3 (Registered Entity Notification/Cap Extension Request): If a CAP extension request was denied, the submitting entity may request, within five (5) calendar days of denial, a joint NERC and CEA review of the denial.

- EEI again notes that there are no deadlines contained in EOP-012-3 and either the deadline should be added to EOP-012-3 or include the process document as an attachment to this standard. Additionally, it is important to note that 5 days is a very short period of time to expect an entity to review and request a review of a time extension denial. It is also unclear if this 5 day deadline is inclusive of weekends and holidays. Regardless, EEI asks that GOs be given sufficient time to review and respond review and respond to the denial. For this reason, we ask that the process document be changed to provide GOs with 10-15 business days consistent with the NERC/CEA reviews.

Insufficient Guidance provided for Entity Data Submission

1. The process document supporting EOP-012-3 is inadequate to ensure entities provide the CEA complete and sufficient documentation with their CAP Extension Requests and Constraint Declarations.

- In the CAP Extension Request Review Process it states that Generator Owners are obliged and responsible for providing clear documentation with the extension request, yet there is nothing in the process document that might guide what might be expected. To address this concern, the Process document should be revised to include examples of the types of documentation that should be provided with a Cap Extension Request for synchronous resources, wind turbines and solar facilities. Without this level of guidance in the Process Document entity submission will vary causing delays and inconsistencies between regions in what is acceptable.
- Similar to the CAP Extension Process, the Constraint Review Process does not provide any details or examples of what would constitute "requisite data" necessary to meet the document requirements required by the CEA and NERC. And while we appreciate the Commission's desire that the process result in "consistent compliance and enforcement outcomes" (ref. P47 or FERC Order), this is only achievable through a clear process that sufficiently guides GOs in their Constraint declaration submissions. To do this, the process should be made clear what must be submitted, including examples of documents that would serve that outcome. This should be done for each type of resource. (i.e., synchronous resources, wind, solar facilities, etc.)

Align is not an appropriate tool for submission of Compliance Obligations under EOP-012-3

1. EEI does not agree that Align is a suitable tool for submission of compliance obligations under EOP-012-3. And is NERC proposing a separate module for these submittals? As currently configured, submittals within Align will be unduly burdensome and will co-mingle self-reports and mitigation plans regarding potential non-compliance items with operational reporting. We are additionally concerned that the use of Align will not just be burdensome to the reporting entities, but also to CEA staff leading to processing delays that might be avoided through the use of another system.

Alternatively, EEI suggests using modules similar to what is used for TADS and GADS be considered as a better alternative. Such a change would avoid security risks and concerns.

Process lacks Transparency sufficient to ensure consistent compliance and enforcement outcomes

1. The Process document lacks sufficient transparency and clarity regarding the process reviews and resulting outcomes when CAP extensions or Constraint Declarations are denied. To address this concern, criteria should be added to the document to ensure consistency in entity submission and guide CEA/NERC reviews. Additionally, the process should include periodic reviews by NERC that assess the consistency of declaration outcomes ensuring all regions have consistent outcomes.

Likes 0	
Dislikes 0	

Response

Michael Goggin - Grid Strategies LLC - 5

Answer	
Document Name	

Comment

Without the revisions ACP recommends in response to Question 1, we do not believe Draft 3 of EOP-012-3 can be considered practical, technically sound, technically feasible, or cost-justified.

Likes 0	
Dislikes 0	

Response

Scott Thompson - PNM Resources - 1,3,5 - WECC,Texas RE

Answer	
Document Name	

Comment

PNM agrees with the comments provided by EEI.

Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	
Document Name	
Comment	
During our review, ACES noticed a minor clerical inconsistency throughout this draft of EOP-012-3. The proposed language is inconsistent in how numbers are written. For example, Requirement R1 requires an action every five calendar years, whereas Requirement R1 Part 1.1.1 requires an action within six (6) calendar month. Thank you for the opportunity to comment.	
Likes 0	
Dislikes 0	
Response	
Hayden Maples - Evergy - 1,3,5,6 - MRO	
Answer	
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI), Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF), and the North American Generator Forum (NAGF) on question 8	
Likes 0	
Dislikes 0	
Response	
Alison MacKellar - Constellation - 5,6	
Answer	
Document Name	
Comment	

Constellation supports comments of NAGF.

Alison Mackellar on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Richard Jackson - U.S. Bureau of Reclamation - 1,5

Answer	
Document Name	

Comment

Reclamation does not agree that this standard is practical, technically sound, technically feasible, cost-justified and serves the best interests of reliability of the Bulk Power System. Comments provided on multiple drafts were not considered. Some examples of that are wind speed, precipitation, lack of temperature data, etc.… This standard will put undo administrative burden on industry without providing adequate weather analysis and protection measures, where required, on components that may be exposed as only 25 years of data are being considered. Also, possible rare weather events that are not predictable (i.e. a 500-year storm) are being ignored.

Likes 0	
Dislikes 0	

Response

Devon Tremont - Utility Services, Inc. - 4 - NA - Not Applicable

Answer	
Document Name	

Comment

Suggest NERC provide clarity on how a wind farm that has derated turbines going into a Generator Cold Weather Reliability Event (e.g., low wind availability) determines the possible derate percentage for determining if a GCWRE has occurred. Is this derate percentage calculated based on the nameplate capacity of the facility or the generation availability of facility going into an event (if less than nameplate capacity)?

Likes 0	
Dislikes 0	

Response

Kimberly Turco - Constellation - 5,6

Answer	
Document Name	
Comment	
Constellation supports comments of NAGF. Kimberly Turco, on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	
Document Name	
Comment	
The standard does little to increase reliability of the bulk electric system. The short and long-term burden of the high-cost investments (equipment upgrades, administrative and engineering/research) required to meet one-off low temperature events outweighs the benefit to overall reliability. There appears to be a lack of concern for overall resource adequacy and cost when focused on such a narrow scope. Expediting the deadline for this standard creates time pressure, limiting a thorough review process, resulting in inferior standard(s). MP align with both EEI and NAGF comments.	
Likes 0	
Dislikes 0	
Response	
Josh Schumacher - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation Segments 1, 3, 5, 6	
Answer	
Document Name	
Comment	
Black Hills Corporation supports the additional comments provided by both EEI & NAGF.	
Likes 0	
Dislikes 0	
Response	

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	
Document Name	
Comment	
It is apparent that compliance fear and other issues not in the FERC Order (e.g., ECWT concerns) played a large part in the balloting failures associated with this Standard and the resulting ROP Section 321 action. The ROP Section 321 path should not be utilized by industry as a way to disagree with FERC. The performance of the generation fleet during extreme cold temperature is the underlying reason a Standard was mandated. Standards are created to support reliable operations and should not be focused on compliance proofing. WECC supports the efforts of the DT in trying to balance the differences in opinions and agendas presented during the development of EOP-012-3.	
Likes 0	
Dislikes 0	
Response	
Richard Vendetti - NextEra Energy - 5	
Answer	
Document Name	
Comment	
NextEra would like to see industry visibility on the approval and denial of Cold Weather Constraints. NERC should be transparent in the release of this information, as all of the industry faces similar challenges in dealing with extreme cold weather and would benefit in understanding what type of constraints are being approved and denied by the CEA. This could be accomplished in a manner such as quarterly reports and CEA subcommittee meetings. The submitting entity need not be recognized within the reports, however the type of constraint with reasons for approval or denial should be stated.	
Likes 0	
Dislikes 0	
Response	
Andrew Smith - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	
Document Name	
Comment	

AZPS agrees with comments submitted by EEI on behalf of their members on concerns with the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process Documents as listed below.

Concern: EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process Document

General Comment: While EEI appreciates the improvements made to the Generator Cold Weather CAP Extension and Constraint Process document, we do not agree that supporting process documents developed for EOP-012-3 should be outside of the approved Reliability Standard. The changes within process documents have direct impacts on entity compliance and any change to a process document that directly or indirectly impacts responsible entities compliance should be included in the Reliability Standard. Our concerns with this specific process document are as follows:

Enforceable Requirements Not Identified in EOP-012-3

1. Cap Extension Request Review Process: It states that "If a registered entity has determined that a Corrective Action Plan (CAP) developed in accordance with EOP- 012-3 Requirements R6 or R7 cannot meet the timetable provided per R6 Part 6.3 or R7 Part 7.1, then the entity will submit an extension request to the ERO Enterprise for approval no less than 60 calendar days prior to the original required CAP completion date." See Process Overview & Step 1

- While EEI does not object to the requirement, there is nothing in the requirements of EOP-012-3 that aligns this deadline. Moreover, it is unclear how this could be effectively enforced without it being included in EOP-012-3.

2. Step 3 (Registered Entity Notification/Cap Extension Request): If a CAP extension request was denied, the submitting entity may request, within five (5) calendar days of denial, a joint NERC and CEA review of the denial.

- EEI again notes that there are no deadlines contained in EOP-012-3 and either the deadline should be added to EOP-012-3 or include the process document as an attachment to this standard. Additionally, it is important to note that 5 days is a very short period of time to expect an entity to review and request a review of a time extension denial. It is also unclear if this 5 day deadline is inclusive of weekends and holidays. Regardless, EEI asks that GOs be given sufficient time to review and respond review and respond to the denial. For this reason, we ask that the process document be changed to provide GOs with 10-15 business days consistent with the NERC/CEA reviews.
- · **Insufficient Guidance provided for Entity Data Submission**

1. The process document supporting EOP-012-3 is inadequate to ensure entities provide the CEA complete and sufficient documentation with their CAP Extension Requests and Constraint Declarations.

- In the CAP Extension Request Review Process it states that Generator Owners are obliged and responsible for providing clear documentation with the extension request, yet there is nothing in the process document that might guide what might be expected. To address this concern, the Process document should be revised to include examples of the types of documentation that should be provided with a Cap Extension Request for synchronous resources, wind turbines and solar facilities. Without this level of guidance in the Process Document entity submission will vary causing delays and inconsistencies between regions in what is acceptable.
- Similar to the CAP Extension Process, the Constraint Review Process does not provide any details or examples of what would constitute "requisite data" necessary to meet the document requirements required by the CEA and NERC. And while we appreciate the Commission's desire that the process result in "consistent compliance and enforcement outcomes" (ref. P47 or FERC Order), this is only achievable through a clear process that sufficiently guides GOs in their Constraint declaration submissions. To do this, the process should be made clear what must be submitted, including examples of documents that would serve that outcome. This should be done for each type of resource. (i.e., synchronous resources, wind, solar facilities, etc.)

Process lacks Transparency sufficient to ensure consistent compliance and enforcement outcomes

1. The Process document lacks sufficient transparency and clarity regarding the process reviews and resulting outcomes when CAP extensions or Constraint Declarations are denied. To address this concern, criteria should be added to the document to ensure consistency in entity submission and

guide CEA/NERC reviews. Additionally, the process should include periodic reviews by NERC that assess the consistency of declaration outcomes ensuring all regions have consistent outcomes.

Likes 0	
Dislikes 0	

Response

Ruchi Shah - AES - AES Corporation - 5

Answer	
Document Name	

Comment

R2.1 allows for CAP to add new or modify existing or previously planned freeze protection measures for new generating unit that enter commercial operation between 10/1/2027 and 3/31/2028. However, it is not clear what is required to be documented in the CAP (similar to what is listed under R7). Although the CAP in R2.1 needs to be implemented and completed by 4/1/2028, will the CAP be required to document a list of corrective actions, updates to cold weather preparedness plan or identification of operating limitations while the CAP is being implemented? We request NERC to provide clarity on this via changes to R2 Part 2.1 or a guidance document.

AES US Renewables believe that R8.4 is unnecessary and will add to administrative burden that does not provide any additional reliability benefit. A Generator Cold Weather Constraint that has been approved by the CEA and will be applicable to another Generator Cold Weather Reliability Event or a similar generating unit does not require the approved constraint declaration to be documented and notified to the CEA. As the ERO is required by FERC to submit section 1600 data annually, these events and their associated CAPs and constraint declarations can be provided to the ERO at that time. An alternative to R8.4 is to develop a section 1600 data request similar to that of MIDAS (for protection system operations) where entities will be able to input their cold weather events, corresponding CAP information and any constraint declaration that was used to address any of the corrective actions. This avoids having a purely administrative burden on registered entities that can create unnecessary compliance risks.

Likes 0	
Dislikes 0	

Response

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1

Answer	
Document Name	

Comment

AEPC has signed on to ACES comments. See ACES comments.

Thank you for the opportunity to comment.

Likes 0	
Dislikes 0	

Response

Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	
Answer	
Document Name	
Comment	
SMUD and BANC appreciate NERC's inclusion of the Compliance Abeyance Period language in Section C of the EOP-012-2 Standard. This thoughtful addition reflects a commitment to enhancing the ERO Compliance Monitoring and Enforcement Program processes, that were proposed by NERC last year. Given that we were only permitted to comment on these proposed changes to EOP-012-2 without the opportunity for a ballot, we commend NERC for taking this progressive step as it may instill greater confidence among entities adopting this revised Standard, even if it may not be flawless.	
Likes 0	
Dislikes 0	

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	
Document Name	
Comment	
FirstEnergy has no additional comments.	
Likes 0	
Dislikes 0	

Response

Brian Lindsey - Entergy - 1,3,6	
Answer	
Document Name	
Comment	
No Comment	
Likes 0	

Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	
Document Name	
Comment	
Duke Energy supports and agrees with EEI comments.	
Likes 0	
Dislikes 0	
Response	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	
Document Name	
Comment	
For utilities that routinely operate reliably in seasonal cold weather months, EOP12-3 will not improve BES reliability. It will increase the administrative burden without improving BES reliability.	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 3,5,6	
Answer	
Document Name	
Comment	
If the CEA does not agree with the substance of the declaration in R8 and declares it invalid, how would that decision be dealt with in the existing requirements or process? In addition, how soon would the CEA have to provide their determination? In general, there appears to be a lack of clarity regarding the timeline that occurs between R8.1 and R8.3. R8.4 requires that a Generator Owner declaring a Generator Cold Weather Constraint “document and provide notice to the CEA” of the circumstances described in the obligation, however there is no mention of how soon that documentation and notice be given, nor any timeline that the CEA would hold	

to in providing their response. AEP requests that clarity be added to R8.4 regarding when the GO must provide their documentation and notification, as well as insight be added to the Technical Rationale document regarding what the timeline is for the CEA's response.

If the CEA has a list of constraints, it follows that they would likely be maintaining that list as well for all the entities involved. And if they are maintaining it, what would the process be for aligning their own maintained list with the one that each GO is maintaining on *their* end for their own assets?

AEP is confused by certain aspects of R8.4, including what its primary intent might be and what it is designed to accomplish. For example, if there is already a constraint in place, why would it be necessary to include "one or more corrective actions to address" an underlying cause? Also, what is being requested in R8.4 appears to be redundant with the Section 1600 Data Requests currently being drafted regarding cold weather, so care should be taken to ensure there is no duplications of effort or obligations. We believe that additional content added to the Technical Rationale document would be beneficial to further explain the intent-of and reasoning-behind R8.4. That being said, we believe that R8.4, if it were retained, could be more clearly written while still retaining its (perceived) meaning. As a result, AEP recommends revising R8.4 as follows:

8.4 Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event with the same cause as that of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause are addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit.

In addition, it should be noted that only those causations within the Generator Owner's control would be subject to the root cause analysis. As a result, fuel supply issues (were they found to be a cause) would not be included in the information provided.

Section E "Associated Documents" specifies the "Calculating Extreme Cold Weather Temperature" document, but does not include a hyperlink to it. We suggest that a hyperlink be added for this document, perhaps as a footnote or similar.

Requirement R2.2 states, "Implement freeze protection measures…" and is inferred by measure M2 that the freeze protection measures need to be implemented by the commercial operation date (COD). We recommend the phrase be revised to state "Implemented freeze protection measures…" to reflect the work is done by COD.

Requirement R3 states, "Implement freeze protection measures…; or Develop a Corrective Action Plan…". We recommend the phrase be revised to state "Implemented freeze protection measures…" to reflect the work is done or if not, a CAP is required to complete the work.

Requirement R6 is not clear how a prior approved Generator Cold Weather Constraint is to be addressed when a Generation Cold Weather Reliability Event occurs where the root cause of the event is covered by the constraint. Is a CAP required or does the GO just follow the R8.4?

Likes 0	
Dislikes 0	

Response

Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group

Answer	
Document Name	2024-03_Unofficial_Comment_Form_EOP-012-3_321 MRO_NSRF_Final.docx

Comment

MRO NSRF does also appreciate the opportunity to comment, but the lack of ballot and short turnaround time from closing to the Board of Trustees meeting does not instill confidence much input will be utilized.

MRO NSRF recognizes the tight timelines and specific guidelines prescribed by FERC, but is concerned that reliability impacts may result from some of the changes compared to EOP-012-2.

To that point, MRO NSRF would suggest that NERC review the dates of R2, as currently written it would seem that all generating units that "contractually committed to design criteria" prior to June 29, 2023 but does enter commercial operation until after March 21, 2028 are not subject to any compliance obligation under R2. While there will likely be very few generating units that fall under this oversight, this is illustrative of MRO NSRF's concern regarding developing Standards on such extremely tight timelines.

Requirement 2 has the bullet: "Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8." For clarity, suggest adding, "Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8." To requirement 3.

Likes 0	
Dislikes 0	

Response

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Comments

Project Name: 2024-03 Revisions to EOP-012-2 | Draft 3
Comment Period Start Date: 1/27/2025
Comment Period End Date: 3/12/2025
Associated Ballot(s):

There were 43 sets of responses, including comments from approximately 108 different people from approximately 77 companies representing 7 of the Industry Segments as shown in the table on the following pages.

Summary Response to Comments

Thank you to all who submitted comments on the draft of proposed Reliability Standard EOP-012-3 posted under Section 321.5 of The North American Reliability Corporation (NERC) Rules of Procedure. The comments provided meaningful insights and guidance to the NERC Staff and Standards Committee volunteers charged with carrying out the Board-directed responsibilities under Section 321 of the NERC Rules of Procedure.

Under Section 321.5.2 of the Rules of Procedure, the Board of Trustees may consider approval of a standard "with such modifications as the Board of Trustees determines are appropriate in light of the comments received." The stakeholder comments received during this comment period informed the development of the following recommendations to the NERC Board of Trustees for further modifications:

- Revised definition of Generator Cold Weather Constraint, to better reflect what is meant by "freeze protection measures" in the context of improving generator cold weather preparedness.
- Revised Requirement R2 to provide that a Generator Owner (GO) with a generating unit entering commercial operation on or after October 1, 2027 shall either implement the required capability or declare a Generator Cold Weather Constraint, if

applicable. A new footnote is added to clarify that the October 1, 2027 date may be different in non-U.S. jurisdictions. The implementation issue supported originally by Requirement R2 Part 2.1 and Part 2.2 is addressed in the implementation plan instead, where the compliance obligations and timelines can be stated much more clearly. This change addresses the concerns that were raised about potential gaps in applicability and retroactive applicability of requirements. However, it maintains extra implementation time for some entities, a concept supported by stakeholders.

- Related to the above, the implementation plan adds a phased-in compliance date for Requirement R2; the revisions clarify that a generating unit entering commercial operation on or after the October 1, 2027 date shall comply with Requirement R2 upon entering commercial operation, unless the exception formerly in Requirement R2 Part 2.1 applies. If an entity designed its unit prior to June 29, 2023 but enters commercial operation between October 1, 2027 and March 31, 2028, the entity shall have until April 1, 2028 to comply with Requirement R2 relating to implementing required capability.
- Requirement R6 Footnote 14 clarifies, in response to a comment, what is meant by an "early season event" (i.e. an event in September, October, or November).
- Requirement R8 Part 8.4 clarifies the required action when a GO experiences a repeat Generator Cold Weather Reliability Event at the same or a similar unit, and already has a validated Generator Cold Weather Constraint addressing the corrective actions that would be required to address the issue.
- EOP-012-3 Attachment 1, "Case-by-Case Determinations of Generator Cold Weather Constraints" 5a and 5b (accelerated premature retirement, cancellation of a planned unit) are revised to require the GO to have an attestation signed by an officer of the company to accompany its determination, made through an analysis, that the constraint applies. This addition was intended to address a concern about potentially questionable economic constraint declarations being submitted for Compliance Enforcement Authority (CEA) review. The change is not expected to meaningfully increase the administrative burden for affected GOs seeking to make such a declaration.

Several entities have submitted comments emphasizing the need for consistency and transparency in Generator Cold Weather Constraint evaluations across The Electric Reliability Organization (ERO) Enterprise or offering suggestions to improve the appeal process. These comments were shared with Compliance Monitoring and Enforcement Program (CMEP) staff. NERC agrees that ensuring consistency and transparency in these determinations will be of the utmost importance. The draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process has been revised to provide additional information on how this will be accomplished. The ERO

Enterprise is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated. Guidance will include the types of documentation that would be most helpful to the entity and the ERO Enterprise for making these determinations in a timely manner. Consistent with the comments, NERC has also expanded the time available to request a joint CEA/NERC review of a denial.

Other entities have sought clarification on how the various parts of EOP-012-3 will work together. Individual responses to these comments are provided below. ERO Compliance Monitoring and Enforcement Staff are collecting Frequently Asked Questions about the EOP-012 standard that will inform future communications. Entities may always reach out to their CEA for specific guidance or questions.

While all comments received were given due consideration, not all comments or suggestions resulted in a recommended change to proposed EOP-012-3. For example, recommendations to include cost/benefit analysis in the standard were not considered to be responsive to The Federal Energy Regulatory Commission (FERC) June 2024 Order directives. Similarly, the recommendation to create a standard Corrective Action Plan implementation timeframe of 12 months for units experiencing Generator Cold Weather Reliability Events was not thought to fully address the reliability concerns underlying the Commission's directive for a timelier implementation of such plans.

Other suggestions, such as to require an out of cycle review of a declared Generator Cold Weather Constraint upon receiving a notification that material facts had changed, were considered; however, it was determined that alternative, more targeted mechanisms may be equally effective in driving understanding of new technologies and present fewer implementation concerns than a broadly worded requirement that would apply to all Generator Cold Weather Constraints.

Recommendations to incorporate the EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process into the standard were not adopted, on the basis that the standard sets forth mandatory obligations for registered entities for the reliable operation of the Bulk-Power System (BPS), and this process document describes how the CMEP program will oversee this aspect of compliance with some flexibility to account for the expected entity timing issues.

Further revisions to the Attachment 1 Generator Cold Weather Constraint lists were considered but not recommended at this time.

Please refer to the individual comment responses below for a more detailed discussion of how the individual comments were considered in developing the final recommendations to the Board of Trustees.

All comments submitted can be reviewed in their original format on the project page.

If you feel that your comment has been overlooked, let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, contact Director of Standards, Jamie Calderon (via email) or at (404) 446-9647.

Questions

1. In paragraph 47 of the June 2024 Order, FERC directed NERC to revise EOP-012-2 and/or the definition of Generator Cold Weather Constraint to "ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them." FERC provided several examples of how NERC may meet directives in this paragraph and explained that NERC may address these concerns in an equally efficient and effective manner, provided NERC explains how it addresses FERC's concerns. FERC further directed NERC to remove references to "cost", "reasonable cost", "unreasonable cost" and "good business practices" and to replace them with clear and auditable criteria.

Proposed EOP-012-3 would revise the definition of Generator Cold Weather Constraint and provide a list in Attachment 1 to the standard of situations which would comprise "known" generator constraints, as well as a list of situations which may constitute constraints, depending on the facts and circumstances. In developing this list, the drafting team considered remarks from the November 2024 technical conference and industry comments on prior drafts.

Do you agree that the proposed revisions to the definition of Generator Cold Weather Constraint and addition of Attachment 1 address the FERC directives in paragraph 47? Please provide any additional comments to consider. If you do not agree, please provide your language change suggestions.

2. In paragraph 54 of the June 2024 Order, FERC directed NERC to modify EOP-012-2 "so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner."

To address this directive, proposed EOP-012-3 would require each Generator Owner that declares a constraint to submit it to the CEA for validation (Requirement R8 Part 8.1). Constraints shall be submitted within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable (for new units this time is within 15 days of entering commercial operation). The process for ERO review is addressed separately in an ERO process document.

Do you agree that the modifications in Requirement R8 are responsive to the FERC directive in paragraph 54? If you do not agree, please provide your language change suggestions.

3. In paragraph 68 of the June 2024 Order, FERC directed NERC to modify Requirement R7 of EOP-012-2 "to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event". FERC provided an example for how to address this directive, such as to require shorter timeframes for those units that have experienced issues and allow longer timeframes to address similar potential issues across a fleet for those units that have not experienced issues.

In proposed EOP-012-3, requirements for Corrective Action Plans for Generator Cold Weather Reliability Events are combined in Requirement R6. Requirement R6 now includes timeframes for CAP implementation for the unit that experiences the Generator Cold Weather Event (before the next winter season), timeframes for reviewing similar units for the same issue (12 months from the event) and timeframes for implementing CAPs on similar units that were determined to be susceptible to the identified freezing issues (24 months from the review, or 36 months from the event). In developing these modifications, feedback from previous postings of the EOP-012-3 standard were considered.

Do you agree that the modifications in Requirement R6 are responsive to the FERC directive in paragraph 68? If you do not agree, please provide your language change suggestions.

4. In paragraph 70 of the June 2024 Order, FERC directed NERC "to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC." In paragraph 3 of the June 2024 Order, FERC stated that NERC should "ensure that the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension."

In proposed EOP-012-3, Requirement R6 Part 6.4 and Requirement R7 Part 7.2 were added to require any Generator Owner seeking to extend a Corrective Action Plan (CAP) implementation deadline beyond the maximum implementation timeframe, to seek pre-approval of the extension by the CEA. The standard specifies the information that must be included in any submission to allow for this review, including an explanation of the circumstances causing the delay and why those circumstances are beyond the control of the GO, revisions to the CAP in the interim, and an updated timetable for completion.

The drafting team determined that any entities with a need could request information on operating limitations – temporary or otherwise - under the data specification standards (TOP-003, IRO-010), or through other mechanisms for obtaining up-to-date

information on the status and availability of generators, and determined to not include a separate requirement for such notifications in EOP-012-3.

Do you agree that the modifications in Requirement R6 Part 6.4 and Requirement R7 Part 7.2 are responsive to the FERC directives above? If you do not agree, please provide your language change suggestions.

5. Paragraph 72 June 2024 Order, FERC stated: "[W]e…find that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation." FERC directed NERC to develop and submit modifications to Requirement R7, Reliability Standard EOP-012-2 to clarify that any Requirement R7 Corrective Action Plans (CAPs) for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

To remove the CAP option from new generation entering commercial operation on or after October 1, 2027, which is consistent with the original EOP-012-1 standard. The drafting team chose to allow a limited CAP option for certain generators whose design criteria were finalized prior to the first version of the EOP-012 standard being approved, and that will come into commercial operation during the first winter the more stringent requirements for new generation are in effect (i.e. winter 2027-2028). These units would be allowed the option to enter commercial operation and complete any required CAPs by April 1, 2028.

To address industry comments on previous drafts, further clarification is made in Requirement R6 as to scope and applicability and to confirm no retroactive applicability is intended, and additional supporting rationale for the selected bookend dates is provided in the Technical Rationale.

Do you agree that the modifications in EOP-012-3 Requirement R2 are responsive to the FERC directives? If you do not agree, please provide your language change suggestions.

6. In paragraph 76 of the June 2024 Order, FERC directs NERC to remove ambiguities in the Corrective Action Plan implementation plan timelines. As an example, FERC cites the timelines for new, compared to existing, freeze protection measures.

Requirement R7 was revised to clarify that actions to address issues with existing measures must be completed within 24 months, regardless of any longer timeframes for new measures. Requirements for Corrective Action Plans for Generator Cold Weather

Reliability Events are discussed in further detail above. Do you agree that the edits are responsive to the FERC directive in paragraph 76? If you do not agree, please provide your language change suggestions.

7. In paragraph 94 of the June 2024 Order, FERC directs NERC "to develop and submit modifications to Requirement R8, Part 8.1 of proposed Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations" (i.e. more frequent than every five years) "to verify that the declaration remains valid".

In proposed EOP-012-3, new Requirement 9 was created to require a review of each constraint at least once every 36 calendar months. In establishing this timeframe, the drafting team considered feedback provided on appropriate periodicities and sought to balance the burdens of more frequent reviews with the benefit to reliability of implementing new technologies as they become available. Do you agree that the modifications reflected in new Requirement R9 are responsive to the FERC Directives? If you do not agree, please provide your language change suggestions.

8. Under Section 321.5.1 of the NERC Rules of Procedure, the Board of Trustees is to consider whether any proposed standard developed under that section is practical, technically sound, technically feasible, cost-justified and serves the best interests of reliability of the Bulk Power System, among other things. Considering the FERC directives provided above, please provide any other comments you wish the Board of Trustees to consider in whether to adopt proposed Reliability Standard EOP-012-3.

The Industry Segments are:

1 — Transmission Owners
2 — RTOs, ISOs
3 — Load-serving Entities
4 — Transmission-dependent Utilities
5 — Electric Generators
6 — Electricity Brokers, Aggregators, and Marketers
7 — Large Electricity End Users
8 — Small Electricity End Users
9 — Federal, State, Provincial Regulatory or other Government Entities
10 — Regional Reliability Organizations, Regional Entities

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
BC Hydro and Power Authority	Adrian Andreoiu	1,3,5	WECC	BC Hydro	Hootan Jarollahi	BC Hydro and Power Authority	3	WECC
					Helen Hamilton Harding	BC Hydro and Power Authority	5	WECC
					Adrian Andreoiu	BC Hydro and Power Authority	1	WECC
MRO	Anna Martinson	1,2,3,4,5,6	MRO	MRO Group	Shonda McCain	Omaha Public Power District (OPPD)	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					Jamison Cawley	Nebraska Public Power District	1,3,5	MRO
					Jay Sethi	Manitoba Hydro (MH)	1,3,5,6	MRO
					Husam Al-Hadidi	Manitoba Hydro (System Preformance)	1,3,5,6	MRO
					Kimberly Bentley	Western Area Power Administration	1,6	MRO
					George Brown	Pattern Operators LP	5	MRO

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Amy Key	MidAmerican Energy Company (MEC)	1	MRO
					Dane Rogers	Oklahoma Gas and Electric (OG&E)	1,3,5,6	MRO
					Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO
					Michael Ayotte	ITC Holdings	1	MRO
					Peter Brown	Invenergy	5,6	MRO
					Angela Wheat	Southwestern Power Administration	1	MRO
					Joshua Phillips	Southwest Power Pool	2	MRO
					Patrick Tuttle	Oklahoma Municipal Power Authority	4,5	MRO
					Hayden Maples	Evergy	1,3,5,6	MRO
					Kirsten Rowley	MISO	2	MRO

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
WEC Energy Group, Inc.	Christine Kane	3,4,5,6		WEC Energy Group	Christine Kane	WEC Energy Group, Inc.	3	RF
					Michelle Hribar	WEC Energy Group, Inc.	5	RF
					David Boeshaar	WEC Energy Group, Inc.	6	RF
					Candace Morakinyo	WEC Energy Group, Inc.	4	RF
ACES Power Marketing	Jodirah Green	1,3,4,5,6	MRO,NPCC,RF,SERC,Texas RE,WECC	ACES Collaborators	James Shultz	Hoosier Energy Electric Cooperative	1	RF
					Kris Carper	Arizona Electric Power Cooperative, Inc.	1	WECC
					Jordan Mcclellan	Southern Illinois Power Cooperative	1	SERC
					Jason Procuniar	Buckeye Power, Inc.	4	RF
					Scott Brame	North Carolina Electric Membership Corporation	3,4,5	SERC

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Bill Pezalla	Old Dominion Electric Cooperative	3,4	SERC
Black Hills Corporation	Josh Schumacher	1,3,5,6		Black Hills Corporation Segments 1, 3, 5, 6	Trevor Rombough	Black Hills Corporation	1	WECC
					Josh Combs	Black Hills Corporation	3	WECC
					Sheila Suurmeier	Black Hills Corporation	5	WECC
					Josh Schumacher	Black Hills Corporation	6	WECC
Electric Reliability Council of Texas, Inc.	Kennedy Meier	2		ISO/RTO Council Standards Review Committee (SRC)	Kennedy Meier	Electric Reliability Council of Texas, Inc.	2	Texas RE
					Joshua Phillips	Southwest Power Pool, Inc. (RTO)	2	MRO
					Kirsten Rowley	Midcontinent ISO, Inc.	2	RF
					Gregory Campoli	New York Independent System Operator	2	NPCC
					Thomas Foster	PJM Interconnection, L.L.C.	2	RF

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Darcy O'Connell	California ISO	2	WECC
					John Pearson	ISO New England, Inc.	2	NPCC
FirstEnergy - FirstEnergy Corporation	Mark Garza	1,3,4,5,6		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF
					Robert Loy	FirstEnergy - FirstEnergy Solutions	5	RF
					Mark Garza	FirstEnergy-FirstEnergy	1,3,4,5,6	RF
					Stacey Sheehan	FirstEnergy - FirstEnergy Corporation	6	RF
DTE Energy - Detroit Edison Company	Mohamad Elhusseini	3,5		DTE Energy	Mohamad Elhusseini	DTE Energy	5	RF
					Patricia Ireland	DTE Energy	4	RF

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Marvin Johnson	DTE Energy - Detroit Edison Company	3	RF
Southern Company - Southern Company Services, Inc.	Pamela Hunter	1,3,5,6	SERC	Southern Company	Matt Carden	Southern Company - Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
					Leslie Burke	Southern Company - Southern Company Generation	5	SERC
	Sean Bodkin	5,6		Dominion	Victoria Crider	Dominion Energy	3	NA - Not Applicable

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
Dominion - Dominion Resources, Inc.					Sean Bodkin	Dominion Energy	6	NA - Not Applicable
					Steven Belle	Dominion Energy	1	NA - Not Applicable
					Barbara Marion	Dominion Energy	5	NA - Not Applicable
Western Electricity Coordinating Council	Steven Rueckert	10		WECC Entity Monitoring	Steve Rueckert	WECC	10	WECC
					Curtis Crews	WECC	10	WECC
Sacramento Municipal Utility District	Tim Kelley	1,3,4,5,6	WECC	SMUD and BANC	Nicole Looney	Sacramento Municipal Utility District	3	WECC
					Charles Norton	Sacramento Municipal Utility District	6	WECC
					Wei Shao	Sacramento Municipal Utility District	1	WECC
					Foung Mua	Sacramento Municipal Utility District	4	WECC
					Nicole Goi	Sacramento Municipal Utility District	5	WECC

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Kevin Smith	Balancing Authority of Northern California	1	WECC

1. In paragraph 47 of the June 2024 Order, FERC directed NERC to revise EOP-012-2 and/or the definition of Generator Cold Weather Constraint to "ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them." FERC provided several examples of how NERC may meet directives in this paragraph and explained that NERC may address these concerns in an equally efficient and effective manner, provided NERC explains how it addresses FERC's concerns. FERC further directed NERC to remove references to "cost", "reasonable cost", "unreasonable cost" and "good business practices" and to replace them with clear and auditable criteria. **Proposed EOP-012-3 would revise the definition of Generator Cold Weather Constraint and provide a list in Attachment 1 to the standard of situations which would comprise "known" generator constraints, as well as a list of situations which may constitute constraints, depending on the facts and circumstances. In developing this list, the drafting team considered remarks from the November 2024 technical conference and industry comments on prior drafts.** **Do you agree that the proposed revisions to the definition of Generator Cold Weather Constraint and addition of Attachment 1 address the FERC directives in paragraph 47? Please provide any additional comments to consider. If you do not agree, please provide your language change suggestions.**	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
Duke Energy supports and agrees with EEI comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see the response to EEI's comments.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No

Document Name	
Comment	

AES US Renewables support North American Generator Forum (NAGF) comments.
While we agree that some of the constraint criteria have been clarified and refined, we are concerned the language used in several of the criteria can be left to interpretation by the Regional Entities. For example, the phrase used in several of the constraint criteria: "comparable types in regions that experience similar winter climate conditions" can be interpreted differently if there is no guidance provided. We request NERC to provide more clarity and consistency via updates in the technical rationale or a CMEP practice guide.

AES US Renewables also supports ACP's comment regarding the first criterion under Known Generator Cold Weather Constraints, particularly on the October 1, 2029, date for wind turbine towers. Additionally, we request that the second date (currently listed as October 1, 2031) be removed. The rationale for this is that the commercial operation date of a new wind project can face delays due to multiple factors (eg: supply chain, weather, etc). So, setting up a second date does not allow flexibility for Generator Owners (GOs) or developers to account for these delays that are beyond the control of the GO or developer.

Likes 0	
Dislikes 0	

Response

Thank you for your comment. Several entities have submitted comments emphasizing the need for consistency and transparency in constraint evaluations across the ERO Enterprise. NERC agrees that ensuring consistency and transparency in these determinations will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to provide additional information on how this will be accomplished, and it is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner.

As to your second comment, the October 1, 2031 date was added to avoid creating an incentive for entities to stockpile older equipment not meeting the more stringent criteria for later installation well into the future. As discussed in the Technical Rationale, feedback was received during the development process of the expected development timeframes for new technologies. The drafters believed the standard needed to provide time to account for these development timeframes, but that this time should not extend so long as to disincentivize the timely development of newer technologies that can better withstand extreme cold weather conditions at the sites where they are being installed. As

this October 1, 2031 date is six years past the anticipated effective date of EOP-012-3 and four years past the date by which new generating units must meet more stringent requirements, NERC believes this timeframe would allow entities sufficient time to account for incorporating improved equipment in their future plant designs expected to enter commercial operation in late 2031 and beyond.	
Richard Vendetti - NextEra Energy - 5	
Answer	No
Document Name	
Comment	
NextEra does not agree that the proposed revisions to EOP-012-3 satisfy paragraph 47 of the FERC directive, particularly the language *"Specifically, we direct NERC to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them,"* as there are still many unknowns regarding specific criteria for solar generation. NextEra appreciates the efforts made by the Standard Drafting Team (SDT) to include additional constraint language for icing on wind turbines, however there should be similar language provided that addresses solar panels. As such, the modifications are not objective and sufficiently detailed so that applicable entities understand what is required of them.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. In the drafting process for proposed EOP-012-3, it was acknowledged that no single list could account for all circumstances across North America for all technologies developed now and in the future. Hence, the team developed two lists: one addressing issues known to be constraints, and the second addressing issues which may, depending on the facts and circumstances, reasonably preclude implementation of corrective actions and therefore constitute a constraint. With respect to constraints for solar panels, in particular, during the development of various versions of the EOP-012 standard, it was acknowledged that solutions that call for removing frozen precipitation on solar panels would be impractical to implement; therefore, it is a specific situation that is included on the list of "known" constraints. Other constraints on the case-by-case list could apply to solar facilities depending on the facts and circumstances. For example, implementation of a measure would adversely affect reliability, or it would result in the premature closure of a facility. Whether a specific circumstance on this list applies would be up to the entity to demonstrate. The team	

endeavored to explain these possible circumstances in as much objective detail so that entities could generally understand whether their situation would qualify, and the EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process would help ensure that these constraints are being applied evenly to all entities. To the extent NERC experience implementing the standard identifies additional solar-specific constraints, they could be considered for formal inclusion in Attachment 1 through the standards development process.	
Josh Schumacher - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation Segments 1, 3, 5, 6	
Answer	No
Document Name	
Comment	
Black Hills Corporation agrees with the comments provided by NAGF and EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please sese response to the comments provided by NAGF and Edison Electric Institute (EEI).	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
MP agrees with NAGF comments, in that there needs to be a standardized process and documentation to follow to eliminate regional inconsistencies.	
Likes 0	
Dislikes 0	

Response
Thank you for your comment. Several entities have submitted comments emphasizing the need for consistency and transparency in constraint evaluations across the ERO Enterprise. NERC agrees that ensuring consistency and transparency in these determinations will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to provide additional information on how this will be accomplished, and it is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner. Please also see responses to the NAGF comments.

Kimberly Turco - Constellation - 5,6	
Answer	No
Document Name	
Comment	
Constellation concurs with NAGF comments. In addition, while the revised wording is an improvement over prior revisions, and elements of the "Known" Constraints are sufficiently clear to allow consistent application, many of the Constraint determinations rely on an uncertain "analysis", which while allowing latitude for particulars of each situation, also render the result subject to interpretation and difficult to audit. These uncertainties may be defined through application during the "abeyance" period, or implementation guidance, or by further refinement in a later version of the Standard. Kimberly Turco, on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	

Response
Thank you for your comment. In the drafting process for proposed EOP-012-3, it was acknowledged that no single list could account for all circumstances across North America for all technologies developed now and in the future. Hence, the team developed two lists: one addressing issues known to be constraints, and the second addressing issues which may, depending on the facts and circumstances,

reasonably preclude implementation of corrective actions and therefore constitute a constraint. Whether a specific circumstance on this list applies would be up to the entity to demonstrate. The team endeavored to explain these possible circumstances in as much objective detail so that entities could generally understand whether their situation would qualify, and the EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process would help ensure that these constraints are being applied evenly to all entities.

Several entities have submitted comments emphasizing the need for consistency and transparency in constraint evaluations across the ERO Enterprise. NERC agrees that ensuring consistency and transparency in these determinations will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to provide additional information on how this will be accomplished, and it is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner.

As you suggest, NERC will consider compliance guidance and further refinements to the standard as needed to provide further clarity, or, in the case of standards revisions, make needed improvements. NERC will also be reporting on implementation of the EOP-012 standard regularly to FERC to assess its effectiveness, in accordance with the directives in the February 2023 Order approving EOP-012-1.

Alison MacKellar - Constellation - 5,6	
Answer	No
Document Name	
Comment	

Constellation concurs with NAGF comments. In addition, while the revised wording is an improvement over prior revisions, and elements of the "Known" Constraints are sufficiently clear to allow consistent application, many of the Constraint determinations rely on an uncertain "analysis", which while allowing latitude for particulars of each situation, also render the result subject to interpretation and difficult to audit. These uncertainties may be defined through application during the "abeyance" period, or implementation guidance, or by further refinement in a later version of the Standard.

Alison Mackellar on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Thank you. In the drafting process for proposed EOP-012-3, it was acknowledged that no single list could account for all circumstances across North America for all technologies developed now and in the future. Hence, the team developed two lists: one addressing issues known to be constraints, and the second addressing issues which may, depending on the facts and circumstances, reasonably preclude implementation of corrective actions and therefore constitute a constraint. Whether a specific circumstance on this list applies would be up to the entity to demonstrate. The team endeavored to explain these possible circumstances in as much objective detail so that entities could generally understand whether their situation would qualify, and the EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process would help ensure that these constraints are being applied evenly to all entities.

Several entities have submitted comments emphasizing the need for consistency and transparency in constraint evaluations across the ERO Enterprise. NERC agrees that ensuring consistency and transparency in these determinations will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to provide additional information on how this will be accomplished, and it is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner.

As you suggest, NERC will consider implementation guidance and further refinements to the standard as needed to provide further clarity, or, in the case of standards revisions, make the necessary improvements. NERC will also be reporting on implementation of the EOP-012 standard regularly to FERC to assess its effectiveness, in accordance with the directives in the February 2023 Order approving EOP-012-1.

Sean Bodkin - Dominion - Dominion Resources, Inc. - 5,6, Group Name Dominion

Answer	No
Document Name	

Comment

Dominion Energy supports the EEI comments but has the following additional comments. While Dominion Energy agrees with the revised definition of Generator Cold Weather Constraint, we continue to have concerns that the first 9 scenarios listed under “Case-by-case

Determinations of Generator Cold Weather Constraints" in Attachment 1 belong in the "Known Generator Cold Weather Constraints". Each of the scenarios are specific in nature and required to be validated by the CEA and a subjective view by NERC. These scenarios should be expected to be confirmed and approved automatically rather than relying on "interpretation". The 10th scenario is the only one that is general enough to warrant further review on a case-by-case basis.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see the response to the EEI comments. With respect to your additional comments, NERC has determined that the present record is insufficient to support the inclusion of all the "case-by-case" constraints on the "known" constraints list. NERC believes that, while this list is sufficiently detailed and objective and represents a significant improvement upon the status quo, additional review and analysis of the "case-by-case" constraints would help ensure that these constraints are being applied consistently across entities, and consistently with the overall intent of the EOP-012 standard to advance Generator Cold Weather Reliability. To the extent NERC's experience reviewing declared constraints provides a factual or technical basis to move the case-by-case constraints to the "known" list (such as with further supporting detail or clarification), NERC would recommend such changes be considered through the standard development process.	
Usama Tahir - Seminole Electric Cooperative, Inc. - 1,3,4,5,6	
Answer	No
Document Name	
Comment	
Seminole Electric Cooperative SMEs request sufficient detail on how to adjust missing or invalid data. For example, is the missing/invalid data to be excluded from the dataset? If not, should the data be supplemented or estimated? Will the 'Determination of Location's Extreme Cold Weather Temperature' guide be updated to include specific criterion for adjustment of missing/invalid data?	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. It is NERC's intent that the revised Requirement R1 Part 1.1 will clarify that entities have flexibility to determine how they will account for missing or invalid data in their datasets. This change was made in response to comments on an earlier version of the draft EOP-012 standard that suggested potential compliance concerns when an entity had a less than perfect weather data set for a generating unit location. NERC has proposed a two-year compliance abeyance period for Requirement R1 Part 1.1 to gather information to support the development of additional guidance to entities regarding the treatment of missing data and, if needed, inform the development of further revisions to the standard or Extreme Cold Weather Temperature formula that would better advance the goal of Generator Cold Weather Reliability. NERC understands that other industry efforts may be underway to develop implementation guidance for ERO endorsement that may provide further guidance and information.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
The NAGF notes that the proposed EOP-012-3 Draft #3 does not contain the information necessary to ensure consistent application of the proposed "Known Generator Cold Weather Constraints" or "Case-by-Case Generator Cold Weather Constraints" as shown in Attachment 1. Without sufficient details provided to ensure the process is followed consistently across all regions, the end results of the process do not appear to be auditable. As such, it fails to meet the expectations of FERC as well as NERC's Ten Benchmarks of an Excellent Reliability Standard. If NERC continues to move the proposed standard forward, the NAGF asks that NERC staff work with industry to develop a new high-priority Standards Authorization Request to address this and other issues identified by industry to address this and other identified issues. As currently structured, there is no consideration of the cost versus reliability benefits for investing in hardening generator facilities for extreme cold weather. For example, how will NERC and the CEA evaluate the need to implement freeze protection measures to meet an ECWT of -15.1 degrees with a design minimum of -15 degrees at cost of $20 million to make a change to meet this ECWT? The existing documentation does not provide clarity related to the process, needed information or any level of cost/benefit or other means to determine what is expected to meet compliance.	
Likes 0	

Dislikes 0	

Response

Thank you for your comment. In the drafting process for proposed EOP-012-3, it was acknowledged that no single list could account for all circumstances across North America for all technologies developed now and in the future. Hence, the team developed two lists: one addressing issues known to be constraints, and the second addressing issues which may, depending on the facts and circumstances, reasonably preclude implementation of corrective actions and therefore constitute a constraint.

Whether a specific circumstance on this list applies would be up to the entity to demonstrate. The team endeavored to explain these possible circumstances in as much objective detail so that entities could generally understand whether their situation would qualify, and the EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process would help ensure that these constraints are being applied evenly to all entities. NERC believes that, while this list is sufficiently detailed and objective and represents a significant improvement upon the status quo, additional review and analysis of the "case-by-case" constraints would help ensure that these constraints are being applied consistently across entities, and consistently with the overall intent of the EOP-012 standard to advance generator cold weather reliability.

Several entities have submitted comments emphasizing the need for consistency and transparency in constraint evaluations across the ERO Enterprise. NERC agrees that ensuring consistency and transparency in these determinations will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to provide additional information on how this will be accomplished, and it is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner. To the extent NERC's experience provides a factual or technical basis to move any case-by-case constraints to the "known" list" (such as with further supporting detail or clarification), NERC would recommend such changes be considered through the standard development process.

With respect to the comment about cost/benefit analysis, FERC specifically directed NERC to remove all references to "reasonable cost," "unreasonable cost," "cost," and "good business practices" from the EOP-012 standard. June 2024 Order at P 47. Consistent with FERC's guidance, NERC has removed such language. NERC instead proposes to include a limited set of clearly defined circumstances which, in the opinion of the various industry subject matter experts that have provided input on this project, would generally constitute an acceptable economic constraint, subject to case-by-case review. Attachment 1 also includes other circumstances that, while not directly mentioning costs or economics, have economic implications (e.g., a corrective action that would require an entity to replace wind turbines solely to install

blade de-icing technologies is a “known” constraint). NERC believes the EOP-012 development record supports the inclusion of these constraints, which are clear, specific, and auditable, even if the individual facts and circumstances may vary by entity. To the extent NERC or an industry stakeholder identifies additional specific instances where application of freeze protection measures would be unreasonable, those specific instances may be considered for formal inclusion on the constraint list through the standard development process in a future project. Similarly, if a specific, auditable, and evenly applied formula for identifying “unreasonable costs” is identified, it may be considered for inclusion through the standard development process.	
Nick Leathers - Ameren - Ameren Services - 1,3,5,6 - MRO,SERC	
Answer	No
Document Name	
Comment	
Ameren supports EEI's and NAGF's comments, with more support towards NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please refer to the responses to the EEI and NAGF comments.	
Christine Kane - WEC Energy Group, Inc. - 3,4,5,6, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the NAGF comments as submitted.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment. Please see the response to the NAGF comments.	
Zahid Qayyum - New York Power Authority - 1,3,5,6	
Answer	No
Document Name	
Comment	
NYPA supports NAGF Comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to the NAGF comments.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	No
Document Name	
Comment	
The Independent System Operator/Regional Transmission Organization (ISO/RTO) Standards Review Committee (SRC) (consisting, for purposes of these comments, of CAISO, ERCOT, ISO-NE, PJM, MISO, NYISO, and SPP) appreciates the work undertaken to date. The SRC through these comments responds to NERC's questions as to whether the revised draft of EOP-012-3 adequately addresses FERC's directives. The SRC notes that, for the reasons outlined below, the proposed revisions to the definition of Generator Cold Weather Constraint do not fully address the FERC directives in paragraph 47 of the June 2024 Order. Specifically, the second sentence of the revised definition is inconsistent with paragraph 47 and should be deleted or revised. Additionally, to fully address the Commission's concern that constraint declaration criteria be "sufficiently detailed so that applicable entities understand what is required of them," certain constraint criteria in	

Attachment 1 need to be accompanied by a detailed, well-documented evaluation process to ensure entities understand what will be required of them and reduce the risk of uneven application of the constraint criteria undermining EOP-012-3's underlying goal of improving winterization across the generating fleet. In order to provide constructive comments for NERC's consideration, the SRC proposes specific recommendations that would address these concerns and bring the proposed standard in line with FERC's directives.

Constraint Definition: The Generator Cold Weather Constraint definition defines a constraint as any condition that would preclude a GO from implementing freeze protection measures on Generator Cold Weather Critical Components, then goes on to indicate that freeze protection measures include winterization technologies and practices implemented by similarly situated members of the electric industry. This effectively links the concept of a constraint to existing industry practice, but does not provide guidance on how similar an industry peer might need to be in order to be relevant to the entity declaring a constraint. Linking the constraint concept to existing industry practice is inappropriate for a standard like EOP-012-3 that is designed to improve the overall state of winterization across the generation fleet, not merely maintain the winterization status quo.

Even with the list of potential constraints in Attachment 1, the second sentence of the definition does not meet FERC's directive to be objective and sufficiently detailed to enable applicable entities to understand what is required of them. While the SRC recognizes and supports the drafting team's goal of clarifying that unreasonable freeze protection measures are not required, the second sentence of the definition does not achieve this goal, as it gives the impression that the status quo is a sufficient benchmark.

Proposed Remedy: This SRC concern can be addressed by deleting the second sentence of the revised definition and retaining the first sentence, or by revising the second sentence of the definition to replace the link to existing industry practice with a link to freeze protection measure effectiveness. If NERC elects to revise the second sentence, the SRC recommends the sentence be revised to read as follows: "Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would reasonably be expected to result in effective facility performance while operating at the Extreme Cold Weather Temperature."

Attachment 1 Constraint Criteria: While the SRC believes that EOP-012-3's proposed approach of requiring Compliance Enforcement Authority (CEA) review and approval of constraint declarations is a significant improvement over EOP-012-2, two of the example constraints from the *Case-by-case Determinations of Generator Cold Weather Constraints* section of Attachment 1 require additional clarification regarding how NERC will ensure the Commission's concern that the standard's provisions be "objective and sufficiently detailed so that applicable entities understand what is required of them" is adequately addressed. The SRC outlines its concerns below and proposes as a

remedy that, as part of its submission, the NERC Board commits to developing and filing a well-documented, rigorous evaluation process to ensure consistent, objective evaluation of constraints that are based on these two example constraints.

Specifically, constraint declarations that resemble the examples found in items 5.a (accelerated premature retirement of an existing generating unit) and 5.b (cancellation of plans to finish development of a new generating unit) in the *Case-by-case Determinations of Generator Cold Weather Constraints* section of Attachment 1 should be reviewed under a well-documented evaluation process to ensure they meet the FERC directive that constraint criteria provide sufficient detail for applicable entities to understand what is required of them. This evaluation process will need to explain how the CEA will evaluate the following factors for these constraint criteria:

Item 5.a. For item 5.a, the evaluation process will need to address how the CEA will determine how "accelerated" or "premature" a retirement must be in order to qualify as a constraint under this example. It will also need to specify how the CEA will determine that the requirement to implement freeze protection measures was the clear cause of the premature retirement.

To effectively evaluate whether the requirement to winterize would result in an accelerated premature retirement, the CEA would need to examine the cost of the freeze protection measures, forecasts of future energy prices, and commercially sensitive data about unit operating costs and profitability to determine whether winterizing the unit would truly be uneconomic over the unit's future remaining life. Moreover, the analysis would also need to consider the across-the-board electricity price impacts that could result from competitors of that unit attempting to pass through the costs of similar weatherization work. Such price increases could offset the costs of implementing freeze protection measures, making it extremely difficult to effectively review a determination that the requirement to implement the winterization measure would **result** in accelerated premature retirement. Such a review would likely require a complete examination of the projected future profitability of the unit under a range of scenarios.

This degree of economic analysis and forecasting would also involve what could be a highly subjective examination of that unit's competitive position relative to its peers on a forward-looking basis, and the entire process will need to be thoroughly documented to ensure consistency with FERC's directive that constraint declaration criteria be objective and sufficiently detailed so that applicable entities understand what is required of them. Along these same lines, the constraint evaluation process for item 5.a should address how the CEA will determine whether an "acceptable replacement" is available for the unit in question. In competitive markets, this information is highly confidential and market sensitive, which means the GO declaring the constraint will need clear, detailed guidance on how to make the required showing. The SRC raises these issues to highlight the difficult nature of consistently and objectively applying this evaluation and to emphasize the importance of developing a well-documented evaluation process to ensure consistent application of the exception enabling the intent of EOP-012-3 for improving weatherization across the generation fleet.

Item 5.b. Item 5.b similarly needs a detailed process documenting how the CEA will determine whether implementation of the freeze protection measures would **cause** the GO to cancel plans to finish development of a new generating unit.

Decisions to cancel a unit could be based on many factors, including changes to the underlying economics of developing the unit. In this case, evaluating the asserted basis for cancelling the development of the planned new generating unit could require the CEA to attempt to forecast future generator revenues while accounting for higher wholesale electricity prices resulting from increased costs faced by other units as a result of installing freeze protection measures. Without clear processes, the CEA could have to examine minutes of board meetings and interview company officials in order to effectively determine whether the decision to cancel the development of the new unit would truly be caused by the requirement to install freeze protection measures instead of some other factor, such as higher interest rates or increased permitting costs (as compared to expected future revenues).

The constraint evaluation process should require more than a simple assertion or attestation that the GO would prematurely retire the unit or cancel the construction of a new generating unit if required to implement the freeze protection measure in question. Otherwise, it will be difficult to distinguish constraint declarations that truly implicate the existence of a generating unit from those that are driven by a desire to avoid costs that are inconvenient but manageable. Inconsistent application of this example constraint criterion could undermine the goal of ensuring reliability by bringing all generating units up to a minimum winterization level (subject to only a limited set of constraints based on the physical limitations of certain units) based on expected conditions.

To ensure constraint approvals are consistent, the case-by-case considerations for these constraint criteria should be supported by a rigorous, well-documented evaluation process. This would not eliminate the CEA's authority to evaluate special circumstances, rather it would avoid a potential race to the bottom where units could arbitrarily seek constraints, ultimately resulting in a class of partially winterized units with lower operating costs (and therefore a competitive advantage when they are able to operate) compared to fully winterized units in the same region. Inconsistent application of these constraint criteria could incentivize unit owners to declare these constraints to protect their competitive positions relative to other units. This could be detrimental to reliability, as it could result in uneven winterization of generation units within a region, posing operational challenges for grid operators seeking to manage the grid during extreme cold weather conditions. To help avoid this result, the NERC Board must develop a detailed process explaining how these types of constraint declarations will be evaluated and the types of documentation it will expect GOs to provide to support declarations of these types of constraints. The process should be filed with FERC to provide Industry an opportunity to review the process and provide comments on the process before EOP-012-3 goes into effect and GOs begin submitting constraint declarations for review and approval. Given time constraints, the SRC acknowledges that such a filing could be made as a supplemental filing after EOP-012-3 is filed.

Likes 0	

Dislikes 0	

Response

Thank you for your comment. NERC responds to each of the comments as follows:

Constraint Definition: Feedback received in previous comment periods indicated support for retaining the second sentence in the definition intended to elaborate on what is meant by "freeze protection measures". NERC, however, agrees that this sentence could be improved to reflect other changes in the EOP-012 standard to improve generator cold weather preparedness, not maintain the status quo. While NERC agrees with what it understands to be the intent of the suggested revisions, concerns were identified with the use of the terms "reasonably" and "effective" which may introduce potential ambiguity or uncertainty as to the intended scope. Therefore, NERC has revised the definition as follows: "Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would be expected to result in improved generating unit performance during cold temperatures."

Attachment 1 Constraint Criteria:

Several entities have submitted comments emphasizing the need for consistency and transparency in constraint evaluations across the ERO Enterprise. The SRC's comments further note the need for appropriate rigor in this review to ensure consistency with the overall goal of the EOP-012 standard to improve generator cold weather preparedness. NERC agrees that ensuring consistency, transparency, and appropriate rigor in ERO Enterprise constraint reviews will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to provide additional information on how these goals will be accomplished, and it is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner. NERC recognizes the importance of timely and transparent communications with stakeholders regarding this novel CMEP process and will keep stakeholders informed as refinements are made and new guidance is available.

Regarding the specific examples provided in the comment, NERC understands that the SRC is concerned that entities may be inclined to declare constraints for examples 5.a. and 5.b in the case-by-case constraints list of Attachment 1 to avoid costs that are "inconvenient but manageable." While the SRC proposes that NERC require "more than a simple assertion or attestation" to support declaring such constraints, NERC notes that the posted draft EOP-012-3 did not include an attestation requirement, but a requirement that the determination be supported by analysis. A thorough analysis would consider, among other things, the availability of cost recovery mechanisms (see June 2024 Order at n. 92), and it must support the determination made. While NERC originally believed this would be sufficient to avoid "simple assertions" of economic unreasonableness, after considering the SRC's comments, NERC believes the addition of an attestation requirement

would help mitigate the SRC's concerns regarding potentially spurious constraint declarations. Further, FERC suggested an attestation regarding such constraints would be an acceptable way to meet its directive in its June 2024 Order. See June 2024 Order at P 46:

> For example, one approach could be for NERC to provide a limited set of clearly defined circumstances that could serve as constraints, such as an attestation from a GO or Generator Operator (GOP) that…(2) implementing freeze protection measures in accordance with the Reliability Standard would cause the generating unit to retire within two years; or (3) they would cancel a newly scheduled generating unit that has not yet achieved commercial operation if required to comply with the freeze protection requirements of a Standard.

As such, NERC has revised examples 5.a and 5.b to require that any entity seeking to declare such a constraint must include an attestation signed by an officer of the company affirming the determination (supported by analysis) that the implementation of freeze protection measures, while feasible, would result in the accelerated premature retirement of an existing generating unit with no acceptable replacement available within the accelerated timeframe (5a), or the implementation of freeze protection measures would cause the GO to cancel plans to finish the development of a new generating unit (5b).

NERC believes that these revisions would provide an additional level of assurance that these constraints are not being declared more than truly necessary and only after an analysis has been performed that supports the determination. NERC also believes that the addition of this attestation requirement would impose no significant additional burden on entities seeking to declare such constraints. The ERO Enterprise will review all declared constraints for consistency with the EOP-012 standard.

Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
See comment to question 8.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to question 8.	

Michael Goggin - Grid Strategies LLC - 5	
Answer	No
Document Name	Comments on EOP-012.docx
Comment	

Thank you for your comments.

With respect to your first comment, NERC appreciates the additional feedback and information that has been provided regarding the potential timelines for developing wind turbine towers to meet a lower temperature threshold below the -30C (-22F) design standard and the considerations involved. As indicated in the Technical Rationale, NERC has recognized that the wind turbine tower issue should constitute a "known" constraint, as NERC understands that presently no manufacturer sells a wind tower that would be capable of providing the EOP-012 required capability for locations with an ECWT below -30C (-22F). However, the Commission has recognized that generator cold weather reliability is an extremely important matter, and it has directed NERC in two EOP-012 approval proceedings to ensure that the EOP-012 standard is working to address cold weather reliability risks more quickly. If this "known" constraint did not have an end date, it would not encourage the development of new technologies that would be able to meet the criteria expected of units being installed well after these criteria were established in the first version of the EOP-012 standard approved in February 2023. To the contrary, it would preserve the status quo indefinitely. Including an end date signals that there will be a time past which this situation will not be afforded the same deference as a "known" constraint. NERC believes the proposed dates represent a reasonable start, as they are 6.5 years and 8.5 years, respectively, from the date the criteria for new units was approved in Reliability Standard EOP-012-1 (Feb. 2023), and five years from the effective date of the first version of the EOP-012 standard (Oct. 2024). Therefore, NERC has not made the recommended revisions.

With respect to your second comment, NERC has declined to make the suggested revision to provide that known constraints should not be subject to pre-clearance validation, only after the fact audit, as NERC does not believe such a provision would be consistent with the Commission's directives in the June 2024 Order. *See, e.g.*, June 2024 Order at P 53 ("[G]iven the significant reliability risk evidenced by the failure of generating units during recent extreme winter weather events, we continue to believe that an enhanced level of oversight remains necessary to ensure that Generator Cold Weather Constraints are only declared when warranted"); P 54 ("Accordingly, we again direct NERC, pursuant to section 215(d)(5) of the FPA, to modify proposed Reliability Standard so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner."). The revised EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process provides that "known" constraints will generally be reviewed within 10 days of confirming receipt of the submittal. Consistent with Attachment 1, the CEA will be looking to confirm that the circumstances described in the "known"

constraint are present. The "case-by-case" constraints will require a more fact-specific evaluation. NERC is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner.

With respect to your third comment regarding actions taken after a denial, an entity shall update its Corrective Action Plan with corrective actions that will be completed within the timetables in Requirement R6 Part 6.3 or Requirement R7 Part 7.1. Communication efforts between the submitting entity and the CEA related to updates of the Corrective Action Plan and timetables resulting from a denial of a Generator Cold Weather Constraint are strongly encouraged. NERC believes this clarification addresses your concerns, but welcomes additional feedback on further enhancements that can be made.

Regarding your comment on the Extreme Cold Weather Temperature, the supporting rationale for the Extreme Cold Weather Temperature was explained in detail in the proceeding approving EOP-012-1 and is not being revised as part of this project. NERC will validate or approve Generator Cold Weather Constraint declarations based on whether they meet one of the stated criteria in Attachment 1, regardless of what inability to winterize that creates.

Regarding your comment on visibility of approved and denied constraints, NERC has revised the EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to provide that aggregated, anonymized information may be collected by NERC to facilitate industry awareness. NERC has not specified a timeline to allow flexibility to provide updates as needed.

Regarding your comment to move three of the items presently on the "case-by-case" list to the "known" list, NERC has declined to make the suggested revision. NERC believes that, while these constraints are sufficiently detailed and objective and represent a significant improvement upon the status quo, additional review and analysis of these constraints would help ensure that they are being applied consistently across entities, and consistently with the overall intent of the EOP-012 standard to advance generator cold weather reliability. To the extent NERC's experience reviewing declared constraints provides a factual or technical basis to move any case-by-case constraints to the "known" list (such as with further supporting detail or clarification), NERC would recommend such changes be considered through the standard development process.

With respect to your suggestion to expand the compliance abeyance period to cover all of proposed EOP-012-3, NERC also declines to make the suggested revision. The proposed compliance abeyance period is intended to address a specific concern related to the calculation of the Extreme Cold Weather Temperature when an entity is working with one or more incomplete data sets. It is intended to encourage entities

with questions about their calculations to seek ERO Enterprise guidance so that any potential issues may addressed more quickly than they might otherwise be found through compliance monitoring activities and inform any future refinements that may be needed. While NERC will continue to develop lessons learned and guidance as needed to aid entities in implementing EOP-012 requirements, NERC does not believe a compliance abeyance period for the entire standard would serve the same reliability benefit, particularly as it would also apply to requirements that have been moved over from EOP-011-3 and have been in effect for some time.	
Likes 0	
Dislikes 0	
Response	
See response to all comments included in the attached Word file at the conclusion of the document.	
Brian Lindsey - Entergy - 1,3,6	
Answer	Yes
Document Name	
Comment	
No Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	

FirstEnergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
AEPC has signed on to ACES comments. See ACES comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to ACES comments.	
Andrew Smith - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
AZPS does not object to the proposed Generator Cold Weather Constraint criteria. AZPS agrees with comments submitted by EEI on behalf of their members listed below that the section titled Case by Case Determination of Generator Cold Weather Constraints is too subjective and could result in regional inconsistencies.	

In paragraph 47, the Commission recognized this concern and suggested that NERC "establish a pre-approval process for all Generator Cold Weather Constraint" and while that process was left to NERC to establish, the Commission was clear that the process needed to provide consistent compliance and enforcement outcomes. The process document titled "Generator Cold Weather Extension and Constraint Process", does not appear to meet the expectations set by the Commission. To address this concern, we suggest modifying the process to include oversite that ensures that Cold Weather Constraints are approved in a manner that makes certain that GO declarations are reviewed and approved consistently across all regions. Also, the process should be enhanced to provide clearer guidance regarding entity submissions to ensure consistency in both entity submissions and CEA assessments. (See EEI comments regarding the Compliance Process in our response to Question 8.)	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Several entities have submitted comments emphasizing the need for consistency and transparency in constraint evaluations across the ERO Enterprise. NERC agrees that ensuring consistency and transparency in these determinations will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to provide additional information on how this will be accomplished and it is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
WECC supports the development of Attachment 1 and additional materials delivered by the drafting team 321 team in meeting the FERC directives. Industry should work towards providing clarity in freeze protection measures and Generator Cold Weather Critical Components which, effectively, are the basis for a Generator Cold Weather Constraint declaration. It would be beneficial for the ERO Enterprise to	

consider posting (anonymized) examples of case-by-case determinations of Generator Cold Weather Constraints to support overall industry efforts.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Several entities have submitted comments emphasizing the need for consistency and transparency in constraint evaluations across the ERO Enterprise. NERC agrees that ensuring consistency and transparency in these determinations will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to provide additional information on how this will be accomplished and it is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner.	
Hayden Maples - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the EEI and the North American Generator Forum (NAGF) on question 1	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the responses to the comments provided by NAGF and EEI.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	

Comment	
It is the opinion of ACES that the proposed revisions to Attachment 1 are largely insubstantial changes and overall provide greater clarity over the previous revision.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI does not object to the proposed definition of Generator Cold Weather Constraints or proposed Attachment 1. While we do not object to Attachment 1 and support the list of Known Generator Cold Weather Constraints, the second part of Attachment 1, which includes a Section titled Case by Case Determination of Generator Cold Weather Constraints is too subjective and could result in regional inconsistencies. In paragraph 47, the Commission recognized this concern and suggested that NERC "establish a pre-approval process for all Generator Cold Weather Constraint" and while that process was left to NERC to establish, the Commission was clear that the process needed to provide consistent compliance and enforcement outcomes. The process document titled "Generator Cold Weather Extension and Constraint Process", does not appear to meet the expectations set by the Commission. To address this concern, we suggest modifying the process to include oversite that ensures that Cold Weather Constraints are approved in a manner that makes certain that GO declarations are reviewed and approved consistently across all regions. Also, the process should be enhanced to provide clearer guidance regarding entity submissions to ensure consistency in both entity submissions and CEA assessments. (See EEI comments regarding the Compliance Process in our response to Question 8.)	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment. Several entities have submitted comments emphasizing the need for consistency and transparency in constraint evaluations across the ERO Enterprise. NERC agrees that ensuring consistency and transparency in these determinations will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to provide additional information on how this will be accomplished, and it is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company agrees if EEI's "Proposed Language for Review and Comment" concerns are met.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to EEI comment.	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	
PacifiCorp supports MRO-NSRF comments.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to MRO NSRF Comments.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Thank you for your response.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your response.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Mark Flanary - Midwest Reliability Organization(MRO) - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your response.	
Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Devon Tremont - Utility Services, Inc. - 4 - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Richard Jackson - U.S. Bureau of Reclamation - 1,5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Scott Thompson - PNM Resources - 1,3,5 - WECC,Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	

Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Greg Sorenson - ReliabilityFirst - 10 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	
Document Name	
Comment	
The definition of cold weather constraint appears unchanged.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The definition was not changed in the prior posting, however, it has been revised to be clearer with the intent of the EOP-012 standard to advance Generator Cold Weather Reliability and not maintain the status quo in response to comments received during this posting.	

2. In paragraph 54 of the June 2024 Order, FERC directed NERC to modify EOP-012-2 "so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner."

To address this directive, proposed EOP-012-3 would require each Generator Owner that declares a constraint to submit it to the CEA for validation (Requirement R8 Part 8.1). Constraints shall be submitted within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable (for new units this time is within 15 days of entering commercial operation). The process for ERO review is addressed separately in an ERO process document.

Do you agree that the modifications in Requirement R8 are responsive to the FERC directive in paragraph 54? If you do not agree, please provide your language change suggestions.

Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
See comment to question 8.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to comment in question 8.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	No
Document Name	
Comment	

Requirement R8 is not fully responsive to the FERC directive in paragraph 54. In paragraph 54, the example FERC included to illustrate its intent contemplated NERC or Regional Entity review of both new constraint declarations and changes to existing constraint declarations. However, Requirement R8 does not require NERC or Regional Entity review of changes to existing constraint declarations. To address this omission, the SRC recommends that the following language be added to the end of Requirement R8, Part 8.1: "For changes to existing Generator Cold Weather Constraints, submit within 45 calendar days of identifying the change to the Generator Cold Weather Constraint."	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. NERC understands your concern to be what happens if an entity "changes" their constraint. Constraint declarations are highly dependent on the facts and circumstances. NERC interprets Requirement R8 and R9 such that, if a validated constraint no longer applies for whatever reason, the constraint is no longer "valid." The entity must develop or update a Corrective Action Plan addressing the underlying issue. If no constraint would be valid, the entity must implement the corrective actions according to the specified timeframe. If a different constraint would apply, the entity must submit a new constraint for CEA review within the specified timeline. As NERC believes your concern is addressed within the existing framework, NERC has not made the suggested change.	
Zahid Qayyum - New York Power Authority - 1,3,5,6	
Answer	No
Document Name	
Comment	
NYPA supports NAGF Comments.	
Likes 0	
Dislikes 0	
Response	
Thank you. Please see the response to the NAGF comments.	

Christine Kane - WEC Energy Group, Inc. - 3,4,5,6, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the NAGF comments as submitted.	
Likes 0	
Dislikes 0	
Response	
Thank you. Please see the response to the NAGF comments.	
Nick Leathers - Ameren - Ameren Services - 1,3,5,6 - MRO,SERC	
Answer	No
Document Name	
Comment	
Ameren supports EEI's and NAGF's comments, with more support towards NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you. Please see the responses to the EEI and NAGF comments.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	

Comment
As stated above, FERC does not require NERC to approve the constraint. The CEA has to validate the submitted constraint. The NAGF recommends that NERC modify the proposed standard to ensure NERC is informed of any constraints and confirm the Generator Owner has appropriately addressed all areas of reasonableness. The NAGF is also concerned that the CEAs do not have the expertise, staff or processes in place to manage this process. Several CEAs currently have a large backlog of compliance and enforcement efforts outstanding. The NAGF is concerned that adding the review and determination of constraints under the needed timeline will cause the backlog to grow even more. The NAGF has concerns related to interaction between the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process document. While we appreciate that the drafting team added language in the latest version concerning the ability to request a joint NERC and CEA review of a denial of a constraint declaration, this still does not resolve our concern regarding the scenario of a denial of constraint declaration from second NERC and CEA review. Particularly, our concern is in regard to a new project that has reached commercial operation status under R2.2 where no CAP is allowed. The process does not specify next steps that the Generator Owner can take. For example, does the Generator Owner cease operation of a brand-new generation facility to avoid going into non-compliance because the Generator Owner could not get constraint declaration approved? In addition, the process document is not part of EOP-012-3, but there are timelines specified in the process document. It is not clear what happens if the timelines are not followed by the Generator Owner/Operator. Additionally, the process document only describes the process that should be followed but does not provide the criteria in which the CEA will use to approve/deny a CAP extension or Constraint Declaration. This raises a concern that the CEAs will not be following a consistent set of criteria across the ERO.
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	

With respect to your comment regarding CEA review of constraints, NERC disagrees that FERC did not contemplate ERO pre-approval of any constraints. FERC contemplated situations where NERC could address its directive by validating those constraints met certain pre-defined criteria, or requiring pre-approval of all constraints.

In paragraph 47 of the June 2024 Order, FERC directed NERC as follows:

> Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit to the Commission for approval modifications to proposed Reliability Standard EOP-012-2 that address concerns related to the ambiguity of the newly defined Generator Cold Weather Constraint term and criteria. Specifically, we direct NERC to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective *and* sufficiently detailed so that applicable entities understand what is required of them. One approach to satisfy this directive could be to incorporate into the proposed Reliability Standard a limited and discrete list of circumstances that would qualify as acceptable constraints… Alternatively, NERC could establish a pre-approval process for all Generator Cold Weather Constraint declarations. While a clearly defined list may be preferable, a pre-approval process could be established to ensure entities' declared Generator Cold Weather Constraints are appropriate and can be supported and defended."

NERC has proposed a hybrid approach with elements of both in proposed EOP-012-3. Certain "known" constraints would be validated by the CEA; others would be subject to CEA pre-approval to help ensure they would be applied consistently with the stated criteria and supported by reasonable justification. This pre-approval process would help avoid the potential gamesmanship of the constraint process identified in previous EOP-012 approval proceedings that would harm cold weather reliability. As FERC specifically stated that NERC could delegate this task to the Regional Entities in paragraph 54 of the June 2024 Order, NERC has chosen to do so. NERC understands that NAGF is concerned about CEA staffing and capabilities to address constraints; NERC is responsible for oversight of the ERO Enterprise CMEP and will exercise that oversight in the management of the constraint review process.

To that end, several entities have submitted comments emphasizing the need for consistency and transparency in constraint evaluations across the ERO Enterprise. NERC agrees that ensuring consistency and transparency in these determinations will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to provide additional information on how this will be accomplished and it is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner.

With respect to your concern about timelines in the process document, these timelines are intended to promote timely reviews and avoid delays associated with the receipt of multiple last-minute submissions. For example, NERC asks entities to submit Corrective Action Plan extension requests at least 60 days in advance. However, NERC recognizes that in certain situations the submittal timeframes may not be met due to circumstances beyond the control of a Generator Owner. The ERO Enterprise will prioritize efforts to help ensure timely processing of extension requests as these circumstances arise. However, these efforts will be greatly assisted if entities are proactive in seeking any necessary validations or approvals as soon as they become aware of the need for one.

With respect to your question about the specific application of the EOP-012-3 standard to a Generator Owner owning a new generating unit subject to Requirement R2, NERC notes that, in paragraph 72 of the June Order, FERC found "that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation." The next steps following a constraint denial will be highly dependent on the facts and circumstances. As a general matter, if a specific constraint declaration is denied or found to be invalid, the Generator Owner may work with its Compliance Enforcement Authority to determine if an alternative constraint in Attachment 1 would apply. Timely and proactive contact with the Compliance Enforcement Authority would help ensure that any potential issues can be addressed early on.

Usama Tahir - Seminole Electric Cooperative, Inc. - 1,3,4,5,6	
Answer	No
Document Name	
Comment	
Seminole Electric Cooperative requests the standard drafting team to modify the standard to submit to the regional CEA considering the established relationship between Generator Owners and their regional entities.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. Proposed EOP-012-3 would require the Generator Owner to submit any declared constraints to its CEA, which in most cases would be its Regional Entity.	
Scott Thompson - PNM Resources - 1,3,5 - WECC,Texas RE	
Answer	No
Document Name	
Comment	
Recommend the following modification of R8.4 (the addition of the word 'if' to the first sentence): Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event, **if** the cause of Generator Cold Weather Reliability Event is the same as that of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause of the more recent Generator Cold Weather Reliability Event are addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. NERC received several suggestions to improve the wording of this Requirement R8 Part 8.4 and has clarified the language consistent with those suggestions. This provision now reads, "Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event with the same cause of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause is addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit."	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	No
Document Name	
Comment	

It is the opinion of ACES that the timeline identified for new units identified in Requirement R8, part 8.1 bullet point one is unclear. It is not readily apparent to ACES how this requirement applies to any potential Generator Cold Weather Constraint(s) determined after the generating unit(s) began commercial operation.

Furthermore, the term commercial operation is listed in the NERC Glossary of Terms as a WEEC Regional Definition. Is this term meant to have a different application in the WECC region as opposed to other NERC regions?

We recommend striking the WECC Regional Term "Commercial Operation" and adding a new Continent-wide Term "Commercial Operation" with the following definition:

Commercial Operation:

The stage when an Element connected to the Bulk-Power System begins operating under a contractual or regulatory agreement.

Note: This phase typically

- follows initial start-up testing and/or commissioning activities.
- is associated with the ability of the owner/operator of the Element to begin collecting revenue from said Element.

Additionally, we recommend the following modification to Requirement R8 for the sake of clarity:

R8. Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall:

8.1 Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows:

8.1.1 For any Generator Cold Weather Constraint(s) determined prior to a generating unit(s) beginning Commercial Operation (in accordance with Requirement R2), submit no later than fifteen (15) calendar days after beginning Commercial Operation;

Likes 0	
Dislikes 0	
Response	

Thank you for your comment. Requirement R8 Part 8.1 is intended to address the identification of Generator Cold Weather Constraints that would preclude the implementation of freeze protection measures to provide the required capability at the time of entering commercial operation. As a practical matter, the entity should identify those constraints in advance of entering commercial operation and reach out to their CEA to initiate the review process; however, concerns were raised earlier in the development of the proposed EOP-012-3 standard regarding the standard requiring specific actions of entities prior to them being registered and subject to mandatory compliance with NERC Reliability Standards. For that reason, NERC has declined to make the suggested revision to Requirement R8 Part 8.1.1. With respect to the term "commercial operation", proposed EOP-012-3 footnote 1 clarifies that "commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing." The WECC definition of Commercial Operation is not being proposed as a continent-wide term at this time. If appropriate, a future project could consider development of a continent wide definition; until then, the term is intended to be used with its common meaning in the continent-wide standards where it is used.	
Alison MacKellar - Constellation - 5,6	
Answer	No
Document Name	
Comment	
Constellation supports comments of NAGF. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to the NAGF comments.	
Kimberly Turco - Constellation - 5,6	
Answer	No
Document Name	

Comment	
Constellation supports comments of NAGF. Kimberly Turco, on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to the NAGF comments.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
MP agrees with NAGF – stating CEA's are do not have the expertise, staff, or process to manage validation. The current backlog would likely increase, delaying the approval process.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to the NAGF comments, which addresses NERC oversight of the Compliance Monitoring and Enforcement Program of which the CEA review process is a part, and that FERC specifically stated in the June 2024 Order that NERC may choose to delegate the review task to the Regional Entities.	
Josh Schumacher - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation Segments 1, 3, 5, 6	
Answer	No
Document Name	

Comment
Black Hills Corporation agrees with the comments provided by NAGF.

Likes 0	
Dislikes 0	

Response
Thank you for your comment. Please see the response to the NAGF comments.

Richard Vendetti - NextEra Energy - 5	
Answer	No
Document Name	

Comment
NextEra does not agree that the proposed revisions to EOP-012-3 satisfy paragraph 47 of the FERC directive, particularly the language *"Specifically, we direct NERC to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them,"* as there are still many unknowns regarding specific criteria for solar generation. NextEra appreciates the efforts made by the Standard Drafting Team to include additional constraint language for icing on wind turbines, however there should be similar language provided that addresses solar panels. As such, the modifications are not objective and sufficiently detailed so that applicable entities understand what is required of them.

Likes 0	
Dislikes 0	

Response
Thank you for your comment. Several entities have submitted comments emphasizing the need for consistency and transparency in constraint evaluations across the ERO Enterprise. NERC agrees that ensuring consistency and transparency in these determinations will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to provide additional information on how this will be accomplished and it is planning additional outreach efforts in the early

implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner.

With respect to constraints for solar panels in particular, during the development of various versions of the EOP-012 standard, it was acknowledged that solutions that call for removing frozen precipitation on solar panels would be impractical to implement; therefore, it is a specific situation that is included on the list of "known" constraints. Other constraints on the case-by-case list could apply to solar facilities depending on the facts and circumstances. For example, implementation of a measure would adversely affect reliability, or it would result in the premature closure of a facility. Whether a specific circumstance on this list applies would be up to the entity to demonstrate. The team endeavored to explain these possible circumstances in as much objective detail so that entities could generally understand whether their situation would qualify, and the EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process would help ensure that these constraints are being applied evenly to all entities. To the extent NERC's experience implementing the standard identifies additional solar-specific constraints, they could be considered for formal inclusion in Attachment 1 through the standards development process.

Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	

AES US Renewables still has concerns about the process described in the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process. Although the timelines listed in the document (eg: no less than 60 calendar days) are considered un-enforceable, we are concerned that this document leaves a lot of room for interpretation by each Regional Entity's team that will be utilizing this document to review and approve CAP Extensions and Constraint Declarations. We do appreciate that there is language added in the latest version concerning the ability to request a joint NERC and CEA review of a denial (applies to both CAP extension and constraint declaration). However, this still does not resolve the concern regarding the second NERC and CEA review resulting in a denial, particularly for a new project that has reached commercial operation status under R2.2 where no CAP is allowed. The process does not specify next steps that the Generator Owner can take. For example, what choices does the Generator Owner have if there are no commercially available solutions to mitigate the freeze protection issue?

We request that NERC take these scenarios into account to provide further clarifications or include additional language in the "Generator Cold Weather CAP Extension and Constraint Process" document to make the process clearer, including guidance on next steps when a constraint declaration is denied under R2.2 (after a joint NERC and CEA review) and whether the GO can continue to operate the facility as is. The EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process document also does not have sufficient detailed language to ensure that Cold Weather Constraints declarations would be reviewed consistently across all regions for approvals. Also, since the process falls outside of Reliability Standard EOP-012-3, changes to the defined process may not include industry review and comment. We request that NERC consider addressing consistency concerns as well as clarifying to industry how this document will be enforced or otherwise.

Likes 0	
Dislikes 0	

Response

Thank you for your comment. Several entities have submitted comments emphasizing the need for consistency and transparency in constraint evaluations across the ERO Enterprise. NERC agrees that ensuring consistency and transparency in these determinations will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to provide additional information on how this will be accomplished and it is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner.

With respect to your question about the next steps following a constraint denial for a Generator Owner owning a new generating unit subject to Requirement R2, NERC notes that, in paragraph 72 of the June Order, FERC found "that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation." The next steps following a constraint denial will be highly dependent on the facts and circumstances of the unit. As a general matter, if a specific constraint declaration is denied or found to be invalid, the Generator Owner may work with its Compliance Enforcement Authority to determine if an alternative constraint in Attachment 1 would apply. Timely and proactive contact with the Compliance Enforcement Authority would help ensure that any potential issues can be addressed early on.

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1

Answer	No
Document Name	
Comment	
AEPC has signed on to ACES comments. See ACES comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to ACES.	
Brian Lindsey - Entergy - 1,3,6	
Answer	No
Document Name	
Comment	
Entergy notes that the NERC "Generator Cold Weather CAP Extension and Constraint Process" (Step 2 – ERO Enterprise Review, page 2) requires the CEA to "*complete the review within 45 calendar days of acknowledgement or provide notification to the submitting entity that they are extending the time needed for review*", but does not limit or cap the amount of time the CEA has to complete the review explicitly, which could result in significant delays.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. NERC recognizes that entities may be concerned if the Compliance Enforcement Authority unreasonably delays the review of their Corrective Action Plan extension request or their Generator Cold Weather Constraint, and the implications that may have for the registered entity if the extension request is denied or the Generator Cold Weather Constraint declaration is deemed invalid. It is NERC's expectation that all such requests will be reviewed in a timely manner across the ERO Enterprise and to the extent any delay would	

impact compliance obligations, that would be handled on a case-by-case basis with the entity. NERC will provide guidance as needed to ensure that entities provide the proper documentation and support to facilitate a timely review.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
Duke Energy supports and agrees with EEI comments. Additionally, changes to R8 do not support standard language regarding administrative burden for this question. For example, Duke Energy notes that changes to R8, and the associated reasoning provided in the Technical Rationale document for Paragraph 54's directive, to add a timeliness component for the CEA to review constraints does not appear to meet the FERC directive. R8 does not provide guidelines or processes on how the CEA will provide or perform reviews in timely manner.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to EEI's comments. NERC proposes to address the Commission's paragraph 54 directive through Reliability Standard requirements, addressing what users, owners, and operators of the BPS must do regarding the timely submission of Generator Cold Weather Constraint, and the Generator Cold Weather Corrective Action Plan Extension and Constraint Process, which address the timely review by the ERO Enterprise under the umbrella of the Compliance Monitoring and Enforcement Program. Requirement R8 Part 8.4 was added to address concerns about administrative burdens associated with known issues at generating units that have already completed the process of validating a Generator Cold Weather Constraint. In that case, the entity must notify the CEA of a repeat issue so that reliability oversight may be maintained, but is not required to seek a second extensive validation for its preexisting Generator Cold Weather Constraint. In response to comments, this provision was modified to be more clear as to the required actions.	
Greg Sorenson - ReliabilityFirst - 10 - RF	
Answer	Yes

Document Name	
Comment	
Agree with modification. Please consider adding language that any findings when reviewing Corrective Action Plans should be communicated to the RC, PC, BA, etc.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. NERC understands this comment to refer to ERO Enterprise approvals of Corrective Action Plan extensions more generally. The draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process is revised to state that NERC may aggregate anonymized information on Corrective Action Plan extension request to facilitate industry awareness. To the extent that entities responsible for planning and operating the Bulk-Power System would like additional detail from their Generator Owners that is relevant to their responsibilities, they have the ability under other Reliability Standards to request such information.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company agrees with EEI's concerns and agrees with the statement if EEI's concerns are addressed for Question 2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to the EEI comments.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	

Answer	Yes
Document Name	
Comment	

EEI agrees that the modifications made to Requirement R8 are responsive to the directive in paragraph 54 of the FERC Order, however, the language in Requirement R8, subpart 8.4 appears to be incorrectly linked to subpart 8.3 through the addition of the "and" after the Requirement. We additionally suggest some minor non-substantive changes to 8.4 to improve the clarity of this requirement.

To address our concerns, we suggest removing the "and" at the end of subpart 8.3 and make the following changes to 8.4 (All changes are in boldface below):

8.3. If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2;

8.4. Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event **when:**

8.4.1. **T**he cause of Generator Cold Weather Reliability Event is the same as that of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause of the more recent Generator Cold Weather Reliability Event are **in place; or**

8.4.2. **Covered through an** existing validated Generator Cold Weather Constraint for the same or similar unit.

Likes 0	
Dislikes 0	

Response

Thank you for your comment. NERC has removed the "and" at the end of Requirement R8 Part 8.3 as suggested. While it is NERC's general practice to include "and" or "or" in lists, NERC recognizes the inclusion of the word here may create confusion or a link where none was intended.

With respect to your second comment, NERC has received several suggestions during this comment period to clarify this Requirement R8 Part 8.4 and has revised the language to clarify the actions that are required. Specifically, this Requirement Part is intended to address the situation where a Generator Owner experiences repeat Generator Cold Weather Reliability Events due to the same cause, and the corrective action(s) to address that cause are already addressed by a validated Generator Cold Weather Reliability Constraint. The notification to the CEA would be in lieu of pursuing validation of an identical Generator Cold Weather Constraint every time an event occurs. NERC has interpreted the suggestion to add a Part 8.4.1. to refer to Corrective Action Plans that have corrective actions that are **in place** as referring to those with Corrective Action Plans that are being **implemented** to address the cause of the Generator Cold Weather Reliability Event. Proposed EOP-012-3 Footnote 12 is intended to address those situations. ("If a Generator Owner has previously experienced a Generator Cold Weather Reliability Event and developed a Corrective Action Plan for the generating unit or units under Requirement R6 Parts 6.1 or 6.2, the Generator Owner may review and update its existing plan(s) in lieu of developing a new plan."). Therefore, NERC has not made the suggested change to Requirement R8.	
Hayden Maples - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI), Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF), and the North American Generator Forum (NAGF) on question 2	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the responses to the EEI, MRO NSRF, and NAGF comments.	
Devon Tremont - Utility Services, Inc. - 4 - NA - Not Applicable	
Answer	Yes

Document Name	
Comment	
1. Suggest NERC develop a form for submission of constraint declarations so GOs provide all the needed information to expediate the process for the CEA to make a determination on validity. 2. For generation facilities that have repeated Generator Cold Weather Reliability Events during a winter season that fall into the 'known constraint' category in Attachment 1 (e.g., wind turbine blade icing events), does the GO need to file constraint declarations for each occurrence of the same type of Generator Cold Weather Reliability Event?	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. For comment 1, NERC agrees that a standardized submission form would be helpful and is in the process of developing one. For comment 2, NERC responds that Requirement R8 Part 8.4 was added to the entity's obligations in the case of repeat events and reduce the burden that would be associated with following the constraint process multiple times for known issues. Several entities have recommended revisions to clarify that part, and NERC has responded through clarifying revisions.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
WECC supports the development of NERC process by NERC staff and additional materials delivered by the drafting team/321 team in meeting the FERC directives. Industry should be preparing Generator Cold Weather Constraint materials now to prepare for submittal per the timelines noted within the Standard. While each case may have different facts and circumstances the ERO Enterprise should provide further guidance on expectations of material to be provided to support timely review. That effort would benefit the ERO Enterprise and the industry.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. NERC is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner.	
Andrew Smith - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
AZPS agrees that the modifications made to Requirement R8 are responsive to the directive apart from the recently added Subpart 8.4. AZPS is unclear of certain aspects of 8.4 including what the intent or expectation is. It is unclear how this data will be submitted, including applicable timeframes, while also appearing to possibly duplicate reporting of similar events through the Section 1600 Data Request for Generator Cold Weather Data.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. NERC has received multiple comments suggesting revisions to Requirement R8 Part 8.4 and has revised the language to provide additional clarification as to the required actions. Further information will come regarding the proper form for required reporting. Additionally, NERC will be reviewing its cold weather data reporting requirements in the coming months to identify potential duplication in requirements and streamline future efforts.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	

FirstEnergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Mark Flanary - Midwest Reliability Organization - 10	
Answer	Yes
Document Name	
Comment	
Please see our comment in question number 7.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to question number 7.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your response.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 5,6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Richard Jackson - U.S. Bureau of Reclamation - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your response.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	
Document Name	
Comment	
Tri-State Supports MRO NSRF Comments	
Likes 0	
Dislikes 0	
Response	
Thank you. Please see the response to the MRO NSRF Comments.	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	
Document Name	
Comment	
PacifiCorp supports MRO-NSRF comments.	
Likes 0	
Dislikes 0	

Response	
Thank you. Please see the response to the MRO NSRF comments.	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	
Document Name	
Comment	
BC Hydro appreciates the opportunity to comment and offers the following. The Generator Cold Weather CAP Extension and Constraint Process sets timeline expectations for CAP extensions, including for the CEA. There could be situations where, if the CEA exceeds the 45-day expectation to approve an extension, the submitting GO would be in potential noncompliance to EOP-012-3 if the extension rejection is received after the initial CAP implementation deadline. BC Hydro recommends a provision to allow flexibility for compliance enforcement should there be a case where the CAP timetables are exceeded while an extension request is being processed by the CEA.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. NERC recognizes that entities may be concerned if the Compliance Enforcement Authority unreasonably delays the review of their Corrective Action Plan extension request or their Generator Cold Weather Constraint, and the implications that may have for the registered entity if the extension request is denied or the Generator Cold Weather Constraint declaration is deemed invalid or not approved. It is NERC's expectation that all such requests will be reviewed in a timely manner across the ERO Enterprise and to the extent any delay would impact compliance obligations, that would be handled on a case-by-case basis with the entity. NERC will provide guidance as needed to ensure that entities provide the proper documentation and support to facilitate a timely review.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	

Document Name	

Comment

To provide a certainty to this process and ensure that entities have a path to ensure documented compliance MRO NSRF would suggest that this standard include language to allow for "automatic" approval of any request if after 60 days no response has been provided by the ERO. This is similar to how FERC has a 60-day approval if no action taken.

MRO NSRF has concerns that the Generator Cold Weather CAP Extension and Constraint Process may not be enforceable and is subject to change outside of the standard development process. because it is not part of standard EOP-012-3.

To address this, MRO NSRF suggests adding the Generator Cold Weather CAP Extension and Constraint Process as attachment 2 to the standard.

MRO NSRF recommends the following modification of R8.4 (the addition of the word 'if' to the first sentence):

Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event, if the cause of Generator Cold Weather Reliability Event is the same as that of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause of the more recent Generator Cold Weather Reliability Event are addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.

With respect to your first comment suggesting a 60-day automatic approval action, NERC responds as follows. NERC has declined to make the suggested modification to allow for automatic approval of any request after 60 days if no response has been provided, as NERC does not believe such a provision would be consistent with the June 2024 Order. *See, e.g.*, June 2024 Order at P 53 ("[G]iven the significant reliability risk evidenced by the failure of generating units during recent extreme winter weather events, we continue to believe that an enhanced level of oversight remains necessary to ensure that Generator Cold Weather Constraints are only declared when warranted"); P 54 ("Accordingly, we again direct NERC, pursuant to section 215(d)(5) of the FPA, to modify proposed Reliability Standard so that NERC receives, reviews, evaluates,

and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner."). However, NERC recognizes that entities may be concerned if the Compliance Enforcement Authority unreasonably delays the review of their Corrective Action Plan extension request or their Generator Cold Weather Constraint, and the implications that may have for the registered entity if the extension request is denied or the Generator Cold Weather Constraint declaration is deemed invalid. It is NERC's expectation that all such requests will be reviewed in a timely manner across the ERO Enterprise and to the extent any delay would impact compliance obligations, that would be handled on a case-by-case basis with the entity. NERC will provide guidance as needed to ensure that entities provide the proper documentation and support to facilitate a timely review.

With respect to your second comment regarding adding the process to the standard, NERC notes that Reliability Standards set forth requirements for users, owners, and operators of the Bulk-Power System. The Generator Owner's responsibilities for the timely submission of Corrective Action Plan extension requests and Generator Cold Weather Constraints are specified in the standard. The specific processes that will be used to review such submissions fall under the purview of the ERO Enterprise Compliance Monitoring and Enforcement Program and are not suitable for inclusion in a Reliability Standard. NERC believes the comments received during this posting generally support NERC revising and refining to this process as needed to provide timely clarifications as to the ERO Enterprise's expectations for these reviews. NERC is committed to transparency in the execution of this process and will continue to keep stakeholders informed of process improvements as they occur.

3. In paragraph 68 of the June 2024 Order, FERC directed NERC to modify Requirement R7 of EOP-012-2 "to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event". FERC provided an example for how to address this directive, such as to require shorter timeframes for those units that have experienced issues and allow longer timeframes to address similar potential issues across a fleet for those units that have not experienced issues.

In proposed EOP-012-3, requirements for Corrective Action Plans for Generator Cold Weather Reliability Events are combined in Requirement R6. Requirement R6 now includes timeframes for CAP implementation for the unit that experiences the Generator Cold Weather Event (before the next winter season), timeframes for reviewing similar units for the same issue (12 months from the event) and timeframes for implementing CAPs on similar units that were determined to be susceptible to the identified freezing issues (24 months from the review, or 36 months from the event). In developing these modifications, feedback from previous postings of the EOP-012-3 standard were considered.

Do you agree that the modifications in Requirement R6 are responsive to the FERC directive in paragraph 68? If you do not agree, please provide your language change suggestions.

Brian Lindsey - Entergy - 1,3,6	
Answer	No
Document Name	
Comment	
Entergy agrees that the revision generally addresses paragraph 68, but does not agree with utilization of a footnote in section 6.3.5.1 to address an issue that should be included directly in the Standard Requirement. The footnote language is also ambiguous, a more precise wording such as "*events that occur x days prior to December 1 in the current season*" would be preferred.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. NERC considered whether it could redraft 6.3.5.1 to provide the additional information for early season events in the text, and it determined that the additional language may over-complicate the requirement, considering that the majority of Generator Cold Weather Reliability Events will occur in meteorological winter. However, NERC has revised the footnote to be more precise as to what constitutes an early season event (i.e. September-November events), such that the Generator Owner may have until the start of the following winter season to complete a Corrective Action Plan.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	No
Document Name	
Comment	
AEPC has signed on to ACES comments. See ACES comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to the ACES comments.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
MP agrees with NAGF in adding footnote 11 into the last paragraph of 6.1.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. Please see the response to the NAGF comments.	
Kimberly Turco - Constellation - 5,6	
Answer	No
Document Name	
Comment	
Constellation supports comments of NAGF. Kimberly Turco, on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to the NAGF comments.	
Richard Jackson - U.S. Bureau of Reclamation - 1,5	
Answer	No
Document Name	
Comment	
Reclamation does not agree. Shortening time frames does not alleviate the burden of lack of material, contracting resources, outages or other schedulable items.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. NERC is responding to the June 2024 Order directives to shorten timeframes for implementing Corrective Action Plans for Generator Cold Weather Reliability Events. If circumstances beyond the control of the entity preclude implementation during the required timeframes, the entity may seek an extension.	
Alison MacKellar - Constellation - 5,6	
Answer	No
Document Name	
Comment	
Constellation supports comments of NAGF. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to the comments of NAGF.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 5,6, Group Name Dominion	
Answer	No
Document Name	
Comment	
Dominion Energy generally supports eei comments but has the following additional comments. Section 6.1 of the proposed standard states: *"The Generator Owner shall **develop** a Corrective Action Plan for the generating unit that experienced a Generator Cold Weather Reliability Event no later than prior to the first day of the first December following the Generator Cold Weather Reliability Event."* Section 6.3.5 requires the CAP to be implemented on the unit that experienced a Cold Weather Reliability Event prior to the first day of the first December following the Event. Since this is the same date, and development of the CAP must occur before the implementation. Dominion Energy recommends that the wording being changed to make the time-tables clear. Dominion Energy recommends	

combining 6.1 and 6.3 so that the timetables are clear for the unit that experienced a Cold Weather Reliability Event and move the CAP timetables for units affected by the applicability review in 6.2 to that section.	
Likes 0	
Dislikes 0	

Response

Thank you for your comment. Please see the response to the EEI comments. With respect to your additional comments, NERC responds as follows. In revising EOP-012-2 to meet the FERC directives, the team determined that the focus of Requirement R6 should be on the prompt mitigation of issues known to have caused Generator Cold Weather Reliability Events. A prior draft that included a July 1 or 150 day deadline for developing a Corrective Action Plan did not meet with industry approval, nor did a draft that specified a deadline for Corrective Action Plan completion but failed to include any deadline for developing the Corrective Action Plan itself. To ensure that the focus of the standard would remain on the prompt implementation of corrective measures rather than the specific timing of plan development, the final proposed EOP-012-3 includes the same deadlines for both developing and implementing a Corrective Action Plan. The intent is to provide the entity with some flexibility when it memorializes the causes and corrective actions to be taken, information which would be beneficial in future winter seasons, so the more immediate efforts can be placed on fixing the underlying issue. While NERC acknowledges the suggested revision would be one way to accomplish this objective, NERC believes it would be clearer to maintain the current structure of the requirement with the development of plans addressed first and timelines for completion addressed second.

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators

Answer	No
Document Name	

Comment

We at ACES greatly appreciate the tremendous effort put forth by the drafting team in developing the proposed updates to EOP-012-2 in accordance with the FERC directives.

From the perspective of ACES, the proposed modifications to Requirement R6 are an improvement over previous drafts; however, we believe further refinement would be beneficial. We believe that, as written, the timelines identified in Requirement R6 are too ambiguous and may

unduly discriminate against a GO based solely upon the date the generating unit(s) experienced a Generator Cold Weather Reliability Event ("GCWRE").

It is our opinion that any required compliance timelines would be best defined by removing the inherent obscurity associated with using specific calendar days. In short, we recommend using a timeline based solely on a clearly defined quantity of calendar days and removing all references to explicit months and/or days. Please consider the following hypothetical scenarios as an illustration:

- Generating Unit 1, belonging to Entity A, is a 2x1 combined cycle unit.
  - Unit 1 experiences a GCWRE on October 22nd, 2025, due to a previously unknown freezing issue with the steam turbine lube oil polisher.
  - Per the currently proposed version of Requirement R6 Part 6.3.5.1, Entity A has until December 1st, 2026, to develop and implement a CAP.
    - Entity A develops a CAP for Unit 1 in May 2026.
      - During the development of the CAP, Entity A determines that installing new freeze protection measures (heat trace and insulation) on the lube oil polisher will resolve the identified cause of the GCWRE.
- Generating Unit 2, belonging to Entity B, is a 2x1 combined cycle unit.
  - Unit 2 experiences a GCWRE on March 16th, 2026, due to a previously unknown freezing issue with a coalescing filter on the Station Air system.
    - Unit 2's Station Air system is used for both "Service/Plant" Air and "Instrument" Air.
    - Due to the dual-use nature of the Station Air system, a coalescing filter was installed near each air-operated valve throughout the Combined Cycle plant.
  - Per the currently proposed version of Requirement R6 Part 6.3.5.1, Entity B has until December 1st, 2026, to implement a CAP.
    - Entity B develops a CAP for Unit 2 in August 2026.
      - During the development of the CAP, Entity B determines that installing new freeze protection measures (heat trace and insulation) for the coalescing filter drain will resolve the identified cause of the GCWRE; however, as this is a "Balance of Plant (BOP)" system, Entity B also discovers that 35 such devices exist.
  - Entity B implements the CAP for Unit 2 in November 2026.

In the above examples, Entity A is allowed 405 calendar days after the date of the GCWRE to implement a CAP whereas Entity B is only allowed 260 calendar days after the date of the GCWRE. This results in an unequal application of the Reliability Standard by granting Entity A an additional 145 calendar days to complete the same, or substantially similar, compliance activities as Entity B.

It is the viewpoint of ACES that entities should be provided with an EQUIVALENT length of time to complete compliance activities required by a Reliability Standard. We recommend that the timeline in parts 6.1 and 6.3.5.1 be modified to twelve (12) calendar months regardless of when the Generator Cold Weather Event occurs.

Thus, we recommend modifying Requirement R6 as follows (note: for the sake of brevity, any sections without recommended changes have been omitted):

R6.

6.1 The Generator Owner shall develop a Corrective Action Plan for the generating unit that experienced a Generator Cold Weather Reliability Event no later than twelve (12) calendar months following the Generator Cold Weather Reliability Event.

6.3

6.3.5 A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows:

6.3.5.1 For the generating unit experiencing the Generator Cold Weather Reliability Event, no later than twelve (12) calendar months following the Generator Cold Weather Reliability Event.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. NERC believes that you are referring to Requirement R6, Part 6.1. In developing proposed EOP-012-3 Requirement R6, NERC considered the Commission's guidance that NERC could satisfy its directive to require shorter timeframes to implement corrective measures to address Generator Cold Weather Reliability Events by requiring GOs to implement corrective actions on the units experiencing the event prior to the next winter season (PP 67-68). NERC considered the Commission's findings that known freeze protection risks need to be mitigated more quickly, and a more expedited timeframe is appropriate. NERC also considered the Commission's statement, "[b]ased on compliance with Requirements R2 and R3, those generating units should have already had appropriate freeze protection measures implemented to be capable of operating at the generating units' respective Extreme Cold Weather Temperature."

A standardized timeframe for completion would provide a predictable timetable, and most of the commenters that have made this suggestion have suggested that 12 months would be appropriate. However, a 12 month duration could result in some units experiencing late season events

remaining vulnerable to known freezing issues for all, or nearly all, of the following winter season. NERC also observes that many of these plans would be coming due for completion at points during the winter season that have proven to be challenging for the units; if outages are required, those outages would likely be scheduled outside of the winter season. As such, NERC does not believe this potential alternative to FERC's example from the June 2024 Order would be an equally effective or efficient alternative for addressing the Commission's underlying concerns. In this case, NERC believes the reliability benefit of requiring completion before the start of the next winter season, consistent with the Commission's guidance in the June 2024 Order, far exceeds the practical benefit that may be realized from a standardized implementation timeframe and it represents the practical and likely timeframe for completing freeze protection work. To the extent the time provided is not sufficient to complete corrective actions due to circumstances beyond the entity's control, the entity may submit a Corrective Action Plan extension request.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
The NAGF recommends that Footnote 11 should be moved to be the last sentence of 6.1.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. As this requirement presently has two explanatory footnotes, the first after the temperature criteria and the second after the word "implement", NERC has determined to leave the placement of the footnote explaining the temperature criteria as is.	
Christine Kane - WEC Energy Group, Inc. - 3,4,5,6, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	

WEC Energy Group supports the NAGF comments as submitted.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to the NAGF comments.	
Zahid Qayyum - New York Power Authority - 1,3,5,6	
Answer	No
Document Name	
Comment	
NYPA supports NAGF Comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to the NAGF comments.	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	No
Document Name	
Comment	
Tri-State agrees with MRO NSRF Comments	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments. Please see response to the NAGF comments.	
Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
See comment to question 8.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to question 8.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	

Answer	Yes
Document Name	
Comment	
The NSRF appreciates the changes made for clarity.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
Duke Energy supports and agrees with EEI comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to the EEI's comments.	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	

R6 could be made even better by including the timelines for corrective action plan implementation in the same section, i.e., move item 6.2 (requirement for implementation of CAP for similar units) to section 6.3.5, so that all the specific timeline requirements for meeting CAPS are together.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Requirement R6 Parts 6.1 and 6.2 address the development of Corrective Action Plans, whereas Part 6.3 addresses the requirements for Corrective Action Plans, including the timelines for completion. After considering this and a similar suggestion, and the changes that may be necessary to restructure the requirement, NERC has determined to leave the current structure as is.	
Mark Flanary - Midwest Reliability Organization - 10	
Answer	Yes
Document Name	
Comment	
Please see our comments on Question number 4.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see response to question 4.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	

FirstEnergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Andrew Smith - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
AZPS agrees that the changes are responsive to the FERC directive.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Richard Vendetti - NextEra Energy - 5	
Answer	Yes
Document Name	
Comment	
NextEra further agrees with including non-substantive changes to R8.3, R8.4, including:	

8.3. If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2; **and**

8.4. Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event **when:**

The cause of Generator Cold Weather Reliability Event is the same as that of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause of the more recent Generator Cold Weather Reliability Event are **in place; or**

Covered through an existing validated Generator Cold Weather Constraint for the same or similar unit.

Likes 0	
Dislikes 0	

Response

Thank you for your comment. On the suggestion of EEI, NERC has removed the "and" at the end of Requirement R8 Part 8.3. While it is NERC's general practice to include "and" or "or" in lists, NERC recognizes the inclusion of the word here may create confusion or a link where none was intended.

With respect to the second suggestion, NERC has received several suggestions during this comment period to clarify this Requirement R8 Part 8.4 and has revised the language to clarify the actions that are required. Specifically, this Requirement Part is intended to address the situation where a Generator Owner experiences repeat Generator Cold Weather Reliability Events due to the same cause, and the corrective action(s) to address that cause are already addressed by a validated Generator Cold Weather Reliability Constraint. The notification to the CEA would be in lieu of pursuing validation of an identical Generator Cold Weather Constraint every time an event occurs.

NERC has interpreted the suggestion to add a Part 8.4.1. to refer to Corrective Action Plans that have corrective actions that are **in place** as referring to those with Corrective Action Plans that are being **implemented** to address the cause of the Generator Cold Weather Reliability Event. Proposed EOP-012-3 Footnote 12 is intended to address those situations. ("If a Generator Owner has previously experienced a Generator Cold Weather Reliability Event and developed a Corrective Action Plan for the generating unit or units under Requirement R6 Parts 6.1 or 6.2, the

Generator Owner may review and update its existing plan(s) in lieu of developing a new plan."). NERC believes this change would have a substantive effect, although none may have been intended, and therefore has not made it.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
WECC supports the development of Requirement R6 language and additional materials delivered by the drafting team/321 team in meeting the FERC directives. However, the change to 36 calendar months for other units in a fleet may not meet FERC's expectations and a 24 calendar month timeline seemed reasonable to WECC. Is there any data available from Winter Storm Uri or Elliot to support the longer timelines?	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The 36 calendar month timeline was selected based on a consideration of stakeholder comments on a previous draft of EOP-012-3 indicating that providing only 24 months to complete a fleetwide review and implement corrective actions would not be reasonable. As developing requirements for staggering based on complexity presents its own challenges, NERC determined a 36 calendar month timeline would be sufficient for most cases and, as the requirement is structured, would incentivize the prompt completion of fleetwide reviews and identification of potential issues.	
Josh Schumacher - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation Segments 1, 3, 5, 6	
Answer	Yes
Document Name	
Comment	

Black Hills Corporation supports the changes made to Requirement R7 and agrees that the changes are responsive to the FERC directives contained in paragraph 68. However, Black Hills Corporation also agrees with the comments provided by NAGF regarding moving Footnote 11 into the verbiage of the Standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to the NAGF comments.	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Noting the allowance to update an existing CAP in lieu of developing a new one (per Footnote 10 to Requirement R6 and Requirement R9.1), BC Hydro suggests that a similar provision to update an existing CAP also be added to Requirement R7. This would allow increased efficiencies for where a CAP already exists, not just when experiencing an GCWRE subject to Requirement R6 or upon determination of a GCWC declaration where the declaration is no longer valid.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments and suggestions. The footnote (footnote 8 in revised draft) was added to Requirement R6 in response to stakeholder feedback, due to the possibility of higher volumes of repeatable issues in a shorter timeline. However, the entity would have flexibility to manage its Corrective Action Plans under Requirement R7 as well.	
Hayden Maples - Evergy - 1,3,5,6 - MRO	

Answer	Yes
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the North American Generator Forum (NAGF) on question 3	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to the NAGF comments.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI supports the changes made to Requirement R7 and agrees that the changes are responsive to the directives contained in paragraph 68 of the FERC Order.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Nick Leathers - Ameren - Ameren Services - 1,3,5,6 - MRO,SERC	
Answer	Yes
Document Name	

Comment	
Ameren supports EEI's and NAGF's comments, with more support towards NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see the responses to the EEI and NAGF comments.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company supports the changes made to Requirement R7.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	
PacifiCorp supports MRO-NSRF comments.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see the responses to the EEI and NAGF comments.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your response.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Devon Tremont - Utility Services, Inc. - 4 - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Scott Thompson - PNM Resources - 1,3,5 - WECC,Texas RE	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your response.	
Greg Sorenson - ReliabilityFirst - 10 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	

4. In paragraph 70 of the June 2024 Order, FERC directed NERC "to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC." In paragraph 3 of the June 2024 Order, FERC stated that NERC should "ensure that the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension."

In proposed EOP-012-3, Requirement R6 Part 6.4 and Requirement R7 Part 7.2 were added to require any Generator Owner seeking to extend a Corrective Action Plan (CAP) implementation deadline beyond the maximum implementation timeframe, to seek pre-approval of the extension by the CEA. The standard specifies the information that must be included in any submission to allow for this review, including an explanation of the circumstances causing the delay and why those circumstances are beyond the control of the GO, revisions to the CAP in the interim, and an updated timetable for completion.

The drafting team determined that any entities with a need could request information on operating limitations – temporary or otherwise - under the data specification standards (TOP-003, IRO-010), or through other mechanisms for obtaining up-to-date information on the status and availability of generators, and determined to not include a separate requirement for such notifications in EOP-012-3.

Do you agree that the modifications in Requirement R6 Part 6.4 and Requirement R7 Part 7.2 are responsive to the FERC directives above? If you do not agree, please provide your language change suggestions.	
Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
See comment to question 8.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to question 8.	
Mark Flanary - Midwest Reliability Organization - 10	
Answer	No
Document Name	
Comment	
This comment applies to both R6.4 and R7.2. MRO has concern that there may be a potential issue to enforce the Generator Cold Weather CAP Extension and Constraint Process because it is a separate document/process outside of the standard language. Specifically, MRO is concerned that the 60-day recommendation in this document is not enforceable. To provide clarity and enforceability, MRO recommends either including the Generator Cold Weather CAP Extension and Constraint Process in the standard, for example, as an Attachment 2 OR "no later than 60-day" requirement stated in the process should be explicitly included in the requirement language.	
Likes 0	
Dislikes 0	

Response
Thank you for your comment. Reliability Standards set forth requirements for users, owners, and operators of the Bulk-Power System. The Generator Owner's responsibilities for the timely submission of Corrective Action Plan extension requests and Generator Cold Weather Constraints are specified in the standard. The specific processes that will be used to review such submissions fall under the purview of the ERO Enterprise Compliance Monitoring and Enforcement Program and are not suitable for inclusion in a Reliability Standard. Therefore, NERC has determined not to include it as an attachment to the standard. NERC has considered whether to include certain elements of the EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process as enforceable elements in the standard, such as a requirement for GOs to submit a Corrective Action Plan extension request at least 60 days in advance. NERC asks entities to submit Corrective Action Plan extension requests at least 60 days in advance to promote timeliness in reviews and avoid delays associated with the receipt of multiple last minute requests. However, NERC recognizes that in certain situations the submittal timeframes may not be met due to circumstances beyond the control of a GO. The ERO Enterprise will prioritize efforts to help ensure timely processing of extension requests as these circumstances arise. However, while these efforts will be greatly assisted if entities are proactive in seeking any necessary validations or approvals as soon as they become aware of the need for one, NERC does not see a reliability need to impose a mandatory submission timing requirement at this time.

Brian Lindsey - Entergy - 1,3,6	
Answer	No
Document Name	
Comment	
The language does require the GO to seek approval from the CEA, but neither section 6.4 nor 7.2 explicitly requires the GO to "inform relevant registered entities" of operating limitations during the extension. The Standard also fails to specify which registered entities would be considered "relevant" or provide guidance on the notification process.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comments. Proposed EOP-012-3 does not specifically require the GO to make this notification. As explained in the Consideration of Directives accompanying this posting, it was determined that other Reliability Standards and mechanisms would address the provision of data regarding generator operating limitations in cold weather so as to keep these reliability entities informed, and that including a requirement in EOP-012-3 specifically to address operating limitations during the period of a Corrective Action Plan extension may not provide any reliability benefit.	
Greg Sorenson - ReliabilityFirst - 10 - RF	
Answer	Yes
Document Name	
Comment	
Agree with modification. Please consider adding language that any findings when reviewing Corrective Action Plans (CAP) should be communicated to the RC, PC, BA, etc.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. NERC understands this comment to refer to ERO Enterprise approvals of Corrective Action Plans extensions more generally. The draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process is revised to state that NERC may aggregate anonymized information on Corrective Action Plan extension requests to facilitate industry awareness. To the extent that entities responsible for planning and operating the BPS would like additional detail from their GO that is relevant to their responsibilities, they have the ability under other Reliability Standards to request such information.	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	

PacifiCorp supports MRO-NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please the response to the MRO NSRF Comments.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company agrees the modifications in R6 and R7 are responsive to the FERC directives in paragraph 70.	
Likes 0	
Dislikes 0	
Response	
Thank you for you response.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	

EEI agrees that the modifications in Requirement R6, subpart 6.4 and Requirement R7, subpart 7.2 are responsive to the FERC directives in paragraph 70.	
Likes 0	
Dislikes 0	
Response	
Thank you for you response.	
Alison MacKellar - Constellation - 5,6	
Answer	Yes
Document Name	
Comment	
Constellation supports comments of NAGF. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your response. Please see the response to the NAGF comments.	
Devon Tremont - Utility Services, Inc. - 4 - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	

Suggest that this standard include language to allow for "automatic" approval of any request if after 15 days no response has been provided by the CEA. This is similar to how FERC has a 60-day approval if no action taken. USV understands that timelines are established within the Generator Cold Weather CAP Extension and Constraint Process, however, this may be better understood if included within the standard itself.

To address this, USV suggests, as a minimum, adding the Generator Cold Weather CAP Extension and Constraint Process as attachment 2 to the standard.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. NERC has declined to make the suggested modification to allow for automatic approval of any request after 15 days if no response has been provided, as NERC does not believe such a provision would be consistent with the June 2024 Order. *See, e.g.*, June 2024 Order at P 53 ("Given the significant reliability risk evidenced by the failure of generating units during recent extreme winter weather events, we continue to believe that an enhanced level of oversight remains necessary to ensure that Generator Cold Weather Constraints are only declared when warranted"); P 54 ("Accordingly, we again direct NERC, pursuant to section 215(d)(5) of the FPA, to modify proposed Reliability Standard so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner.").

With respect to your second comment regarding adding the process to the standard, NERC notes that Reliability Standards set forth requirements for users, owners, and operators of the Bulk-Power System. The GO's responsibilities for the timely submission of Corrective Action Plan extension requests and Generator Cold Weather Constraints are specified in the standard. The specific processes that will be used to review such submissions fall under the purview of the ERO Enterprise Compliance Monitoring and Enforcement Program and are not suitable for inclusion in a Reliability Standard.

NERC recognizes that entities may be concerned if the Compliance Enforcement Authority unreasonably delays the review of their Corrective Action Plan extension request or their Generator Cold Weather Constraint, and the implications that may have for the registered entity if the extension request is denied or the Generator Cold Weather Constraint declaration is deemed invalid. It is NERC's expectation that all such requests will be reviewed in a timely manner across the ERO Enterprise and to the extent any delay would impact compliance obligations, that would be handled on a case-by-case basis with the entity. NERC will provide guidance as needed to ensure that entities provide the proper documentation and support to facilitate a timely review.

Kimberly Turco - Constellation - 5,6	
Answer	Yes
Document Name	
Comment	
Constellation supports comments of NAGF. Kimberly Turco, on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your response. Please see the response to the NAGF comments.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
MP agrees. This mechanism for a CAP extension.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	

Josh Schumacher - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation Segments 1, 3, 5, 6	
Answer	Yes
Document Name	
Comment	
Black Hills Corporation agrees that the modifications in Requirement R6, subpart 6.4 and Requirement R7, subpart 7.2 are responsive to the FERC directives in paragraph 70.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
WECC supports the development of the extension language in Requirements R6 and R7 and additional materials delivered by the drafting team/321 team in meeting the FERC directives.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	

Richard Vendetti - NextEra Energy - 5	
Answer	Yes
Document Name	
Comment	
NextEra agrees that the modifications in Requirement R6 Part 6.4 and Requirement R7 Part 7.2 are responsive to the FERC directives above.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Andrew Smith - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
AZPS agrees that the changes are responsive to the FERC directive.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	

Comment	
FirstEnergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
Duke Energy supports and agrees with EEI comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to the EEI's comments.	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your response.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Zahid Qayyum - New York Power Authority - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Christine Kane - WEC Energy Group, Inc. - 3,4,5,6, Group Name WEC Energy Group	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Nick Leathers - Ameren - Ameren Services - 1,3,5,6 - MRO,SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your response.	
Scott Thompson - PNM Resources - 1,3,5 - WECC,Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Hayden Maples - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 5,6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your response.	
Richard Jackson - U.S. Bureau of Reclamation - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	

Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	

5. Paragraph 72 June 2024 Order, FERC stated: "[W]e…find that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation." FERC directed NERC to develop and submit modifications to Requirement R7, Reliability Standard EOP-012-2 to clarify that any Requirement R7 Corrective Action Plans (CAPs) for new generation (i.e. commercially operational after October 1, 2027) must be completed prior to the generating unit's commercial operation date.

To remove the CAP option from new generation entering commercial operation on or after October 1, 2027, which is consistent with the original EOP-012-1 standard. The drafting team chose to allow a limited CAP option for certain generators whose design criteria were finalized prior to the first version of the EOP-012 standard being approved, and that will come into commercial operation during the first winter the more stringent requirements for new generation are in effect (i.e. winter 2027-2028). These units would be allowed the option to enter commercial operation and complete any required CAPs by April 1, 2028.

To address industry comments on previous drafts, further clarification is made in Requirement R6 as to scope and applicability and to confirm no retroactive applicability is intended, and additional supporting rationale for the selected bookend dates is provided in the Technical Rationale.

Do you agree that the modifications in EOP-012-3 Requirement R2 are responsive to the FERC directives? If you do not agree, please provide your language change suggestions.

Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
In Manitoba, EOP-012-1 will not be effective until 2030. The language and dates still create confusion for our effective date. For instance if we contractually commit to design criteria in 2028 and do not enter commercial operation before 2030 its unclear if R2 is enforceable. Regardless we normally operate in cold weather and design for long cold winters.	
Likes 0	
Dislikes 0	

Response
Thank you for your comment. NERC understands that the regulatory processes for approval of Reliability Standards in the Canadian provinces are different than those used for approval in the United States, and that the effective dates may differ depending on the jurisdiction. NERC has also received several comments on this Requirement R2 suggesting further revisions or clarifications. After considering each of these comments, NERC determined that the matter that previous drafts sought to address through the various date-based distinctions in Requirement R2 is fundamentally an implementation matter. As an implementation matter, it would be better addressed through revisions to the implementation plan. Therefore, Requirement R2 is revised to provide that a GO entering commercial operation on or after October 1, 2027 shall either implement the required capability or declare a Generator Cold Weather Constraint, if applicable. The implementation plan is revised to clarify that an entity entering commercial operation after this October 1, 2027 date shall comply with Requirement R2 upon entering commercial operation, unless the exception formerly in Requirement R2 Part 2.1 applies. If an entity designed its unit prior to June 29, 2023 but entered commercial operation between October 1, 2027 and March 31, 2028, the entity shall have until April 1, 2028 to comply with Requirement R2 relating to implementing required capability. Relevant to your comment, the implementation plan also provides that, in non-U.S. jurisdictions that have not adopted prior versions of the standard or have established different dates for Requirement R2 or R3, entities shall implement the standard with dates appropriate to their jurisdiction, or as directed by the Applicable Governmental Authority. NERC believes this revision will help account for the different dates in effect or will be in effect in the Canadian provinces. NERC has also added a footnote to the October 1, 2027 date in both Requirements R2 and R3 to clarify that this “grandfathering” date may be different in non-U.S. jurisdictions.

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	No
Document Name	
Comment	
AEPC has signed on to ACES comments. See ACES comments.	

Likes 0	
Dislikes 0	

Response

Thank you for your comment. Please see the response to the ACES comments.

Ruchi Shah - AES - AES Corporation - 5

Answer	No
Document Name	

Comment

While AES US Renewables appreciates the additional clarification provided under R2.1 and the intent of the February 16, 2023 date, we want to repeat that we do not agree that compliance date should be aligned to a regulatory approval date that is not widely known. The industry as a whole relies on the NERC published implementation plan of EOP-012-1 as that is usually what registered entities are held accountable to. In the case of EOP-012-1's implementation plan, the effective date is supposed to be 10/1/2024. Therefore, we request that the drafting team revise the June 29, 2023 date to October 1, 2024.

Likes 0	
Dislikes 0	

Response

Thank you for your comment. NERC has received several comments on this Requirement R2 suggesting further revisions or clarifications, or identifying issues with the drafted language as it applies in non-U.S. jurisdictions. After considering each of these comments, NERC determined that the matter that previous drafts sought to address through the various date-based distinctions in Requirement R2 is fundamentally an implementation matter. As an implementation matter, it would be better addressed through revisions to the implementation plan.

Therefore, Requirement R2 is revised to provide that a GO entering commercial operation on or after October 1, 2027 shall either implement the required capability or declare a Generator Cold Weather Constraint, if applicable. The implementation plan is revised to clarify that an entity entering commercial operation after this October 1, 2027 date shall comply with Requirement R2 upon entering commercial operation, unless the exception formerly in Requirement R2 Part 2.1 applies. If an entity designed its unit prior to June 29, 2023 but entered commercial

operation between October 1, 2027 and March 31, 2028, the entity shall have until April 1, 2028 to comply with Requirement R2 relating to implementing required capability.

Therefore, while NERC has not changed the "bookend" date that could allow an entity a slightly longer implementation period, NERC believes it is much clearer that no requirement is being made retroactively enforceable.

Kimberly Turco - Constellation - 5,6	
Answer	No
Document Name	

Comment

Constellation generally supports comments of NAGF regarding the dates of commercial operation, i.e., that there may be generators that establish design criteria and go commercial outside of the dates established in the Standard. Constellation recognizes that the window of concern ends in 2027, i.e., in a relatively short time, and that a period of abeyance may allow such exceptions to exist as necessary until the limiting time of 2027 is past. However, absence a period of abeyance, the current wording may result in inadvertent exclusion of some generators from the Standard Requirements.

Kimberly Turco, on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Thank you for your comment. NERC has received several comments on this Requirement R2 suggesting further revisions or clarifications, or identifying issues with the drafted language as it applies in non-U.S. jurisdictions. After considering each of these comments, NERC determined that the matter that previous drafts sought to address through the various date-based distinctions in Requirement R2 is fundamentally an implementation matter. As an implementation matter, it would be better addressed through revisions to the implementation plan.

Therefore, Requirement R2 is revised to provide that a Generator Owner entering commercial operation on or after October 1, 2027 shall either implement the required capability or declare a Generator Cold Weather Constraint, if applicable. The implementation plan is revised to clarify that an entity entering commercial operation after this October 1, 2027 date shall comply with Requirement R2 upon entering commercial operation, unless the exception formerly in Requirement R2 Part 2.1 applies. If an entity designed its unit prior to June 29, 2023 but entered commercial operation between October 1, 2027 and March 31, 2028, the entity shall have until April 1, 2028 to comply with Requirement R2 relating to implementing required capability. NERC believes these revisions will address your concern that some generators may be inadvertently excluded from the standard requirements.	
Alison MacKellar - Constellation - 5,6	
Answer	No
Document Name	
Comment	
Constellation generally supports comments of NAGF regarding the dates of commercial operation, i.e., that there may be generators that establish design criteria and go commercial outside of the dates established in the Standard. Constellation recognizes that the window of concern ends in 2027, i.e., in a relatively short time, and that a period of abeyance may allow such exceptions to exist as necessary until the limiting time of 2027 is past. However, absence a period of abeyance, the current wording may result in inadvertent exclusion of some generators from the Standard Requirements. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. NERC has received several comments on this Requirement R2 suggesting further revisions or clarifications, or identifying issues with the drafted language as it applies in non-U.S. jurisdictions. After considering each of these comments, NERC determined that the matter that previous drafts sought to address through the various date-based distinctions in Requirement R2 is fundamentally an implementation matter. As an implementation matter, it would be better addressed through revisions to the implementation plan.	

Therefore, Requirement R2 is revised to provide that a Generator Owner entering commercial operation on or after October 1, 2027 shall either implement the required capability or declare a Generator Cold Weather Constraint, if applicable. The implementation plan is revised to clarify that an entity entering commercial operation after this October 1, 2027 date shall comply with Requirement R2 upon entering commercial operation, unless the exception formerly in Requirement R2 Part 2.1 applies. If an entity designed its unit prior to June 29, 2023 but entered commercial operation between October 1, 2027 and March 31, 2028, the entity shall have until April 1, 2028 to comply with Requirement R2 relating to implementing required capability.

NERC believes these revisions will address your concern that some generators may be inadvertently excluded from the standard requirements.

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators

Answer	No
Document Name	

Comment

It is the opinion of ACES that the current language of Requirement 2.1 is only partially responsive to paragraph 72 of the FERC directive. Furthermore, it is our opinion that by including an additional date provision to Part 2.1, the applicability of this part is more confusing than ever.

Additionally, considering the newly added “commercial operation” date range of 10/01/2027-03/21/2028 for applicability, an April 1, 2028, CAP deadline seems at best arbitrary. As written, an entity falling under this provision may only have one (1) calendar day to comply. In this hypothetical one (1) calendar day scenario, what is the point of establishing a CAP process at all?

Paragraph 72 of the FERC directive does not explicitly require a corrective action plan (“CAP”), merely that, if a CAP is needed, “…it should be completed by the time that such generating units go into commercial operation.” We contend that by directing that a CAP must be completed prior to beginning commercial operations, FERC has rendered the formalized CAP process both superfluous and moot for Requirement R2.

In brief, ACES recommends removing the date of demarcation entirely and striking any provisions for a CAP from Requirement R2.

However, if the industry is unwaveringly committed to including a conditional provision for including a CAP process, then, in the opinion of ACES, the date of demarcation for contractual commitments is best defined by the effective date of EOP-012-2. It is our perspective that

Implementation Plans are a useful and valuable tool that provide the industry with time to interpret and implement any required compliance actions or activities.

Succinctly stated, it is our opinion that the SDT should NOT break from established precedent by tying compliance date(s) to the governmental authority approval date in lieu of the effective date of the NERC Reliability Standard.

To comply with the FERC directive, ACES recommends using language that is substantially similar to EOP-012-2 as demonstrated below:

R2. Applicable to generating units that begin commercial operation on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below thirty-two (32) degrees Fahrenheit (zero (0) degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of thirty-two (32) degrees Fahrenheit (zero (0) degrees Celsius), shall either:

2.1 Prior to beginning commercial operations, implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (thirty-two (32) km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or

2.2 Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

Likes 0	
Dislikes 0	

Response

Thank you for your comment. NERC has received several comments on this Requirement R2 suggesting further revisions or clarifications, or identifying issues with the drafted language as it applies in non-U.S. jurisdictions. After considering each of these comments, NERC determined that the matter that previous drafts sought to address through the various date-based distinctions in Requirement R2 is fundamentally an implementation matter. As an implementation matter, it would be better addressed through revisions to the implementation plan.

Therefore, Requirement R2 is revised to provide that a Generator Owner entering commercial operation on or after October 1, 2027 shall either implement the required capability or declare a Generator Cold Weather Constraint, if applicable. The provision relating to Corrective Action Plans is removed as suggested.

Because previous phases of the development of EOP-012 have indicated support for the concept of accounting for those generators thought to be too far along in the development process to implement changes readily, this is carried forward in the implementation plan. The implementation plan is revised to clarify that an entity entering commercial operation after this October 1, 2027 date shall comply with Requirement R2 upon entering commercial operation, unless the exception formerly in Requirement R2 Part 2.1 applies. If an entity designed its unit prior to June 29, 2023 but entered commercial operation between October 1, 2027 and March 31, 2028, the entity shall have until April 1, 2028 to comply with Requirement R2 relating to implementing required capability. NERC believes these revisions will address your suggestion to simplify the language of Requirement R2, eliminate the requirement to implement a short-lived Corrective Action Plan, clarify the various obligations of entities, and still address the underlying concern that prompted the inclusion of the former R2.1. in the first place.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
The NAGF recommends that the Standard Committee delete the last phrase from R2.1 “and which enter commercial operation between October 1, 2027 and March 31, 2028”. Otherwise, a generator that signed agreements in 2022 and goes commercial in June 2028 has no obligation under R2 or R3. This is a clear example of why the NERC Standards Development Process is structured to allow a reasonable time for discussion and review of a proposed standard. Time is required to meet the expected level of excellent standards, as detailed in NERC’ Ten Benchmarks of an Excellent Reliability Standard. FERC’s continued insistence on deadlines that cause NERC to shortcut the development process are resulting in subpar, problematic standards.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Thank you for your comment. NERC has received several comments on this Requirement R2 suggesting further revisions or clarifications, or identifying issues with the drafted language as it applies in non-U.S. jurisdictions. After considering each of these comments, NERC determined that the matter that previous drafts sought to address through the various date-based distinctions in Requirement	

R2 is fundamentally an implementation matter. As an implementation matter, it would be better addressed through revisions to the implementation plan. Therefore, Requirement R2 is revised to provide that a Generator Owner entering commercial operation on or after October 1, 2027 shall either implement the required capability or declare a Generator Cold Weather Constraint, if applicable. The provision relating to Corrective Action Plans is removed as suggested. Because previous phases of the development of EOP-012 have indicated support for the concept of accounting for those generators thought to be too far along in the development process to implement changes readily, this is carried forward in the implementation plan. The implementation plan is revised to clarify that an entity entering commercial operation after this October 1, 2027 date shall comply with Requirement R2 upon entering commercial operation, unless the exception formerly in Requirement R2 Part 2.1 applies. If an entity designed its unit prior to June 29, 2023 but entered commercial operation between October 1, 2027 and March 31, 2028, the entity shall have until April 1, 2028 to comply with Requirement R2 relating to implementing required capability. NERC believes these revisions will address your suggestion to simplify the language of Requirement R2 to remove the potential for applicability gaps.
Nick Leathers - Ameren - Ameren Services - 1,3,5,6 - MRO,SERC

Answer	No
Document Name	

Comment
Ameren supports EEI's and NAGF's comments, with more support towards NAGF's comments.

Likes 0	
Dislikes 0	

Response
Thank you for your comment. Please see the response to the NAGF comments.
Christine Kane - WEC Energy Group, Inc. - 3,4,5,6, Group Name WEC Energy Group

Answer	No
Document Name	
Comment	
WEC Energy group supports the NAGF comments as submitted.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to the NAGF comments.	
Zahid Qayyum - New York Power Authority - 1,3,5,6	
Answer	No
Document Name	
Comment	
NYPA supports NAGF Comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to the NAGF comments.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	No
Document Name	
Comment	

The modifications to Requirement R2 are not fully responsive to the FERC directives. Requirement R2, Part 2.1 allows certain generating units that enter commercial operation between October 1, 2027, and March 31, 2028, to develop, implement, and complete a CAP by April 1, 2028. This is contrary to FERC's directive that generators that are commercially operational after October 1, 2027, should complete any necessary CAP by the time they go into commercial operation and that any CAPs under Requirement R2 must be completed before the generating unit's commercial operation date. Fully complying with FERC's directive would require revising the second bullet point in Part 2.1 as follows: "Develop, implement, and complete by ***the earlier of*** April 1, 2028, ***or the generating unit's commercial operation date*** a Corrective Action Plan . . . ."	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. NERC has received several comments on this Requirement R2 suggesting further revisions or clarifications, or identifying issues with the drafted language as it applies in non-U.S. jurisdictions. After considering each of these comments, NERC determined that the matter that previous drafts sought to address through the various date-based distinctions in Requirement R2 is fundamentally an implementation matter. As an implementation matter, it would be better addressed through revisions to the implementation plan. Therefore, Requirement R2 is revised to provide that a Generator Owner entering commercial operation on or after October 1, 2027 shall either implement the required capability or declare a Generator Cold Weather Constraint, if applicable. The implementation plan is revised to clarify that an entity entering commercial operation after this October 1, 2027 date shall comply with Requirement R2 upon entering commercial operation, unless the exception formerly in Requirement R2 Part 2.1 applies. If an entity designed its unit prior to June 29, 2023 but enters commercial operation between October 1, 2027 and March 31, 2028, the entity shall have until April 1, 2028 to comply with Requirement R2 relating to implementing required capability. The rationale for this exception is addressed in the Technical Rationale. NERC has not added the suggested language to the standard about completing Corrective Action Plans prior to the commercial operation date, as NERC has determined to simplify and streamline the requirement, and entities have previously expressed concern about requiring performance in standards prior to the date the entity is registered with NERC for mandatory compliance purposes. However, under the changes to the standard and implementation plan, the practical effect would be the same.	
Marty Hostler - Northern California Power Agency - 3,4,5,6	

Answer	No
Document Name	
Comment	
See comment to question 8.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to question 8.	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	No
Document Name	2024-03_BCHydro_Comments_EOP-012-3_321_Question5_2025-03-07.pdf
Comment	

(1) The addition of June 29, 2023 to Requirement R2 Part 2.1 creates a potential gap. Generating units that may have their design criteria committed before June 29, 2023 and will enter commercial operation on or after April 1, 2028 do not appear to be subject to the proposed EOP-012-3 R2. Suggest revising to close this potential gap.

The following table may provide further clarification:

Commercial operation	**Design before June 29, 2023**	**Design after June 29, 2023**
Before October 2027	R3	R3
October 2027 – March 2028	R2 Part 2.1	R2 Part 2.2
After March 2028	No Requirement	R2 Part 2.2

(2) Requirement R2 Footnote 4 allows non-U.S. jurisdictions the use of the date the applicable government authority in the relevant jurisdiction approved the first version of the EOP-012 Reliability Standard and the definition of Extreme Cold Weather Temperature. However, there are no similar provisions for the "first winter" period.

BC Hydro requests that similar flexibility to that granted to non-U.S. jurisdictions for the June 29, 2023 design criteria date also be afforded for CAP(s) implementation timelines. This will allow flexibility to align with their regulatory approval processes.

Likes 0	
Dislikes 0	

Response

Thank you for your comment. NERC understands that the regulatory processes for approval of Reliability Standards in the Canadian provinces are different than those used for approval in the United States, and that the effective dates may differ depending on the jurisdiction. NERC has also received several comments on this Requirement R2 suggesting further revisions or clarifications. After considering each of these comments, NERC determined that the matter that previous drafts sought to address through the various date-based distinctions in Requirement R2 is fundamentally an implementation matter. As an implementation matter, it would be better addressed through revisions to the implementation plan.

Therefore, Requirement R2 is revised to provide that a Generator Owner entering commercial operation on or after October 1, 2027 shall either implement the required capability or declare a Generator Cold Weather Constraint, if applicable. A footnote is added to reflect that this October 1, 2027 date may be a different date in a non-U.S. jurisdiction, and the appropriate date should be substituted.

The implementation plan is revised to clarify that an entity entering commercial operation after this October 1, 2027 date shall comply with the standard upon entering commercial operation, unless the exception formerly in Requirement R2 Part 2.1 applies. If an entity designed its unit prior to June 29, 2023 but entered commercial operation between October 1, 2027 and March 31, 2028, the entity shall have until April 1, 2028 to comply with Requirement R2 relating to implementing required capability.

Relevant to your comment, the implementation plan also provides that, in non-U.S. jurisdictions that have not adopted prior versions of the standard or have established different dates for Requirement R2 or R3, entities shall implement the standard with dates appropriate to their

jurisdiction, or as directed by the Applicable Governmental Authority. NERC believes this revision will help account for the different dates in effect or will be in effect in the Canadian provinces so that similar implementation allowances could be made if needed.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
Duke Energy supports and agrees with EEI comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to the EEI's comments.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	

Andrew Smith - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
AZPS agrees that the changes are responsive to the FERC directive.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Richard Vendetti - NextEra Energy - 5	
Answer	Yes
Document Name	
Comment	
NextEra agrees that the modifications in EOP-012-3 Requirement R2 are responsive to the FERC directives.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	

Comment	
WECC supports the development of Requirement R2 language and additional materials delivered by the drafting team/321 team in meeting the FERC directives.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Josh Schumacher - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation Segments 1, 3, 5, 6	
Answer	Yes
Document Name	
Comment	
Black Hills Corporation does not object to the modifications made to Requirement R2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	

MP agrees, however NAGF identifies a compliance gap that could lead to generators not falling under the standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to NAGF, which discusses the revisions made to the standard and implementation plan to address this and other issues raised.	
Hayden Maples - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) and the North American Generator Forum (NAGF) on question 5	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the responses to the MRO NSRF and NAGF comments.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI does not object to the modifications made to Requirement R2.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company agrees with EEI's position on Requirement R2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to the EEI comments.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	

Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Mark Flanary - Midwest Reliability Organization - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Devon Tremont - Utility Services, Inc. - 4 - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Richard Jackson - U.S. Bureau of Reclamation - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your response.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 5,6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Scott Thompson - PNM Resources - 1,3,5 - WECC,Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Greg Sorenson - ReliabilityFirst - 10 - RF	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	
Document Name	
Comment	

MRO NSRF believes that this should be the date that a standard became effective which brought the term ECWT became part of a Reliability Standard that is Subject to Enforcement, which occurred when EOP-012-2 became effective on 10/1/2024 for US Entities.

While this change would not have a substantial material impact on the implementation of this standard, using dates that are not determined by the Standard Drafting Process as part of Standard language adds a level of uncertainty that may have negative repercussions for entities moving forward in many areas. One such area is the wording of contractual obligations for building new or modifying existing facilities.

There is a difference in the dates between R7 and Attachment 1.

Attachment 1

Individual wind turbine towers manufactured prior to October 1, 2029, that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per

Requirement R1 for generating units that began commercial operation prior to October 1, 2031.

MRO NSRF suggests a single timeline to avoid confusion, utilizing the language from Attachment 1.

Likes 0	
Dislikes 0	

Response

Thank you for your comment. NERC has received several comments on this Requirement R2 suggesting further revisions or clarifications, or identifying issues with the drafted language as it applies in non-U.S. jurisdictions. After considering each of these comments, NERC determined that the matter that previous drafts sought to address through the various date-based distinctions in Requirement R2 is fundamentally an implementation matter. As an implementation matter, it would be better addressed through revisions to the implementation plan.

Therefore, Requirement R2 is revised to provide that a Generator Owner entering commercial operation on or after October 1, 2027 shall either implement the required capability or declare a Generator Cold Weather Constraint, if applicable. The implementation plan is revised to clarify that an entity entering commercial operation after this October 1, 2027 date shall comply with Requirement R2 upon entering commercial operation, unless the exception formerly in Requirement R2 Part 2.1 applies. If an entity designed its unit prior to June 29, 2023 but entered commercial operation between October 1, 2027 and March 31, 2028, the entity shall have until April 1, 2028 to comply with Requirement R2 relating to implementing required capability.

Therefore, while NERC has not changed the "bookend" date that could allow an entity a slightly longer implementation period, NERC believes the intent behind including these dates is much clearer when it is presented in the context of a phased-in compliance date in an implementation plan.

With respect to Attachment 1, it was determined that the wind turbine structural limitation issue was a real issue and should serve as a "known" constraint; however, an end date needed to be established to incentivize the development of improved technologies that could better withstand the coldest climates and avoid making the status quo permanent. As these are contemplating future dates after which the known constraint will sunset as a "known" constraint, they will be different than the October 1, 2027 grandfathering date for requirements for new vs. existing generation included in the standard.

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer	
Document Name	

Comment

Since the change was made to add verbiage in Requirement Part 2.1, Texas RE recommends revising Requirement R7 to include Requirement R2 (change in bold):

R7. Each Generator Owner that is required to develop a Corrective Action Plan under Requirements R1, **R2**, R3, or R9 shall develop and implement the Corrective Action Plan in accordance with the following:

Likes 0	
Dislikes 0	

Response

Thank you for your comment. NERC has received several comments on this Requirement R2 suggesting further revisions or clarifications, or identifying issues with the drafted language as it applies in non-U.S. jurisdictions. After considering each of these comments, NERC determined that the matter that previous drafts sought to address through the various date-based distinctions in Requirement R2 is fundamentally an implementation matter. As an implementation matter, it would be better addressed through revisions to the implementation plan.

Therefore, Requirement R2 is revised to provide that a Generator Owner entering commercial operation on or after October 1, 2027 shall either implement the required capability or declare a Generator Cold Weather Constraint, if applicable. The implementation plan is revised to clarify that an entity entering commercial operation after this October 1, 2027 date shall comply with Requirement R2 upon entering commercial operation, unless the exception formerly in Requirement R2 Part 2.1 applies. If an entity designed its unit prior to June 29, 2023 but entered commercial operation between October 1, 2027 and March 31, 2028, the entity shall have until April 1, 2028 to comply with Requirement R2 relating to implementing required capability.

As the underlying matter is now addressed in the implementation plan, NERC has not made the suggested revision to Requirement R7.

Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6

Answer	
Document Name	

Comment

PacifiCorp supports MRO-NSRF comments.

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response the MRO-NSRF comments.	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	
Document Name	
Comment	
Tri-State Supports MRO NSRF Comments	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to the MRO-NSRF comments.	

6. In paragraph 76 of the June 2024 Order, FERC directs NERC to remove ambiguities in the Corrective Action Plan implementation plan timelines. As an example, FERC cites the timelines for new, compared to existing, freeze protection measures. **Requirement R7 was revised to clarify that actions to address issues with existing measures must be completed within 24 months, regardless of any longer timeframes for new measures. Requirements for Corrective Action Plans for Generator Cold Weather Reliability Events are discussed in further detail above. Do you agree that the edits are responsive to the FERC directive in paragraph 76? If you do not agree, please provide your language change suggestions.**

Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
See comment to question 8.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to question 8.	

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	No
Document Name	
Comment	
Tri-State supports MRO NSRF comments.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment. Please see the response to the MRO-NSRF comments.	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	No
Document Name	
Comment	
PacifiCorp supports MRO-NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to the MRO-NSRF comments.	
Richard Jackson - U.S. Bureau of Reclamation - 1,5	
Answer	No
Document Name	
Comment	
Reclamation does not agree. Shortening time frames to 24 months does not alleviate the burden of lack of material, contracting resources, outages or other schedulable items.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. NERC has not proposed to shorten the timeframe for remedying existing freeze protection measures from what is provided in Reliability Standard EOP-012-2; however, consistent with paragraph 70 of the June 2024 Order, NERC has provided that entities may not extend this timeline without pre-approval by the Compliance Enforcement Authority. To the extent circumstances beyond the Generator Owner's control would preclude implementation within the specified timeframe, the Generator Owner may seek an extension.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
CAPs and implementation should be at the discretion of utilities that normally operate reliably during seasonal cold weather.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Proposed EOP-012-3 is intended to address the February 2023 and June 2024 Orders of the U.S. FERC, which directed NERC to require Corrective Action Plans to be completed on specific timeframes, and for any extensions of those timeframes to be pre-approved by NERC. From discussions with representatives of Canadian entities, NERC understands that different regulatory frameworks are in place in the Canadian provinces that may govern the implementation of corrective actions contained in Corrective Action Plans. NERC has recently received a Standard Authorization Request seeking to develop a Canadian variance to account for these different frameworks.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	

Regarding R6.5, this requirement creates a variable time frame from 8 months to 13 months. A generator experiencing a cold weather event in February only has 8 months to develop a CAP whereas a unit experiencing a cold weather event in October has 13 months to develop a CAP.

MRO NSRF suggests that requiring all CAPs have the same fixed time frame for development and completion would still address the issue while also providing timing certainty to entities, for example the requirement could state that CAPs need to be completed within 12 calendar months from the occurrence of the Generator Cold Weather Reliability Event.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. NERC believes that you are referring to Requirement R6, Part 6.1. In developing proposed EOP-012-3 Requirement R6, NERC considered the Commission's guidance that NERC could satisfy its directive to require shorter timeframes to implement corrective measures to address Generator Cold Weather Reliability Events by requiring GOs to implement corrective actions on the units experiencing the event prior to the next winter season (PP 67-68). NERC considered the Commission's findings that known freeze protection risks need to be mitigated more quickly, and a more expedited timeframe is appropriate. NERC also considered the Commission's statement, "[b]ased on compliance with Requirements R2 and R3, those generating units should have already had appropriate freeze protection measures implemented to be capable of operating at the generating units' respective Extreme Cold Weather Temperature."

A standardized timeframe for completion would provide a predictable timetable, and most of the commenters that have made this suggestion have suggested that 12 months would be appropriate. However, a 12 month duration could result in some units experiencing late season events remaining vulnerable to known freezing issues for all, or nearly all, of the following winter season. NERC also observes that many of these plans would be coming due for completion at points during the winter season that have proven to be challenging for the units; if outages are required, those outages would likely be scheduled outside of the winter season.

As such, NERC does not believe this potential alternative to FERC's example from the June 2024 Order would be an equally effective or efficient alternative for addressing the Commission's underlying concerns. In this case, NERC believes the reliability benefit of requiring completion before the start of the next winter season, consistent with the Commission's guidance in the June 2024 Order, far exceeds the practical benefit that may be realized from a standardized implementation timeframe and it represents the practical and likely timeframe for completing freeze protection work. To the extent the time provided is not sufficient to complete corrective actions due to circumstances beyond the entity's control, the entity may submit a Corrective Action Plan extension request.

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Yes, Southern Company agrees with the modifications made to R7.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI agrees that the modifications made to Requirement R7 are sufficiently clear and align with the FERC directives in paragra ph 76.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Hayden Maples - Evergy - 1,3,5,6 - MRO	
Answer	Yes

Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) on question 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your support. Please see the response to the MRO NSRF's comments.	
Alison MacKellar - Constellation - 5,6	
Answer	Yes
Document Name	
Comment	
Constellation supports comments of NAGF. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your support. Please see the response to NAGF's comments.	
Kimberly Turco - Constellation - 5,6	
Answer	Yes
Document Name	

Comment	
Constellation supports comments of NAGF. Kimberly Turco, on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your support. Please see the response to NAGF's comments.	
Josh Schumacher - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation Segments 1, 3, 5, 6	
Answer	Yes
Document Name	
Comment	
Black Hills Corporation agrees that the modifications made to Requirement R7 are sufficiently clear and align with the FERC directives in paragraph 76.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	

WECC supports the development of language for Requirement R7 and additional materials delivered by the drafting team in meeting the FERC directives. The additional clarity provided in the Technical Rationale around "new" and "existing" freeze protection measures should minimize issues associated with extension requests if used effectively by industry.

However, if we are reading the requirment correctly, it creates a variable time frame from 8 months to 13 months. A generator experiencing a cold weather event in February would only have 8 months to develop a CAP whereas a unit experiencing a cold weather event in October would have 13 months to develop a CAP. Would it not be more consistent if all CAPs had the same fixed time frames, say one year from the occurrence orf the CWRE?

Likes 0	
Dislikes 0	

Response

Thank you for your comments. NERC believes that you are referring to Requirement R6, Part 6.1. In developing proposed EOP-012-3 Requirement R6, NERC considered the Commission's guidance that NERC could satisfy its directive to require shorter timeframes to implement corrective measures to address Generator Cold Weather Reliability Events by requiring GOs to implement corrective actions on the units experiencing the event prior to the next winter season (PP 67-68). NERC considered the Commission's findings that known freeze protection risks need to be mitigated more quickly, and a more expedited timeframe is appropriate. NERC also considered the Commission's statement, "[b]ased on compliance with Requirements R2 and R3, those generating units should have already had appropriate freeze protection measures implemented to be capable of operating at the generating units' respective Extreme Cold Weather Temperature."

A standardized timeframe for completion would provide a predictable timetable, and most of the commenters that have made this suggestion have suggested that 12 months would be appropriate. However, a 12 month duration could result in some units experiencing late season events remaining vulnerable to known freezing issues for all, or nearly all, of the following winter season. NERC also observes that many of these plans would be coming due for completion at points during the winter season that have proven to be challenging for the units; if outages are required, those outages would likely be scheduled outside of the winter season.

As such, NERC does not believe this potential alternative to FERC's example from the June 2024 Order would be an equally effective or efficient alternative for addressing the Commission's underlying concerns. In this case, NERC believes the reliability benefit of requiring completion before

the start of the next winter season, consistent with the Commission's guidance in the June 2024 Order, far exceeds the practical benefit that may be realized from a standardized implementation timeframe and it represents the practical and likely timeframe for completing freeze protection work. To the extent the time provided is not sufficient to complete corrective actions due to circumstances beyond the entity's control, the entity may submit a Corrective Action Plan extension request.	
Richard Vendetti - NextEra Energy - 5	
Answer	Yes
Document Name	
Comment	
NextEra agrees that the edits are responsible to the FERC directive in paragraph 76.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Andrew Smith - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
AZPS agrees that the changes are responsive to the FERC directive.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Mark Flanary - Midwest Reliability Organization - 10	
Answer	Yes
Document Name	
Comment	
MRO recommends that all CAPs to have a fixed period for development and completion instead of creating variable periods.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. NERC believes that you are referring to Requirement R6, Part 6.1. In developing proposed EOP-012-3 Requirement R6, NERC considered the Commission's guidance that NERC could satisfy its directive to require shorter timeframes to implement corrective measures to address Generator Cold Weather Reliability Events by requiring GOs to implement corrective actions on the units experiencing the event prior to the next winter season (PP 67-68). NERC considered the Commission's findings that known freeze protection risks need to be	

mitigated more quickly, and a more expedited timeframe is appropriate. NERC also considered the Commission's statement, "[b]ased on compliance with Requirements R2 and R3, those generating units should have already had appropriate freeze protection measures implemented to be capable of operating at the generating units' respective Extreme Cold Weather Temperature."

A standardized timeframe for completion would provide a predictable timetable, and most of the commenters that have made this suggestion have suggested that 12 months would be appropriate. However, a 12 month duration could result in some units experiencing late season events remaining vulnerable to known freezing issues for all, or nearly all, of the following winter season. NERC also observes that many of these plans would be coming due for completion at points during the winter season that have proven to be challenging for the units; if outages are required, those outages would likely be scheduled outside of the winter season.

As such, NERC does not believe this potential alternative to FERC's example from the June 2024 Order would be an equally effective or efficient alternative for addressing the Commission's underlying concerns. In this case, NERC believes the reliability benefit of requiring completion before the start of the next winter season, consistent with the Commission's guidance in the June 2024 Order, far exceeds the practical benefit that may be realized from a standardized implementation timeframe and it represents the practical and likely timeframe for completing freeze protection work. To the extent the time provided is not sufficient to complete corrective actions due to circumstances beyond the entity's control, the entity may submit a Corrective Action Plan extension request.

Brian Lindsey - Entergy - 1,3,6	
Answer	Yes
Document Name	
Comment	
No Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	

Answer	Yes
Document Name	
Comment	
Duke Energy supports and agrees with EEI comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see the response to EEI's comments.	
Greg Sorenson - ReliabilityFirst - 10 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Zahid Qayyum - New York Power Authority - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Christine Kane - WEC Energy Group, Inc. - 3,4,5,6, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Nick Leathers - Ameren - Ameren Services - 1,3,5,6 - MRO,SERC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your response.	
Scott Thompson - PNM Resources - 1,3,5 - WECC,Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 5,6, Group Name Dominion	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Devon Tremont - Utility Services, Inc. - 4 - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your response.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your response.	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	

7. In paragraph 94 of the June 2024 Order, FERC directs NERC "to develop and submit modifications to Requirement R8, Part 8.1 of proposed Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations" (i.e. more frequent than every five years) "to verify that the declaration remains valid".

In proposed EOP-012-3, new Requirement 9 was created to require a review of each constraint at least once every 36 calendar months. In establishing this timeframe, the drafting team considered feedback provided on appropriate periodicities and sought to ba lance the burdens of more frequent reviews with the benefit to reliability of implementing new technologies as they become available. Do you agree that the modifications reflected in new Requirement R9 are responsive to the FERC Directives? If you do not agree, please provide your language change suggestions.

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	

Comment

Duke Energy supports and agrees with EEI comments with the following enhancements:

9.1. If a Generator Cold Weather Constraint is determined "upon review" to be no longer needed "or requires modification", then within six (6) calendar… These improvements are needed to address not only the removal of constraints that are no longer necessary, but also the modifications of constraints whose reviews determine scope changes.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. Please see responses to EEI's comments. With respect to the additional comment, NERC responds as follows. NERC understands your concern to be what happens if an entity "changes" their constraint. NERC interprets Requirement R8 and R9 such that, if a validated constraint no longer applies for whatever reason, the entity must develop or update a Corrective Action Plan addressing the underlying issue. If no constraint would be valid, the entity must implement the corrective actions according to the specified timeframe. If

a different constraint would apply, the entity must submit a new constraint for CEA validation within the specified timeline. As NERC believes your concern is addressed within the existing framework, NERC has not made the suggested change.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	No
Document Name	
Comment	

Shortening the review period to at least once every 36 calendar months is not adequately responsive to the FERC directive. Paragraph 94 is clear that FERC's underlying goal is to incentivize timely adoption of new freeze protection methodologies, even at the cost of additional administrative burden to the Generator Owner. A 36-month review period allows for substantial lag between the availability of a new freeze protection technology and the evaluation and adoption of that technology, particularly if the technology first becomes available shortly after the completion of a 36-month review. To address this issue and more fully implement FERC's directive, the SRC recommends that Requirement R9 be revised as follows to require Generator Owners to react to knowledge of changed circumstances that comes by way of regulatory entities outside of the 36-month review cycle, such as any guidance NERC or FERC might issue as part of their oversight of the constraint declaration process and monitoring of the technological state of freeze protection measures in the industry:

"The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. ***The Generator Owner shall also review each Generator Cold Weather Constraint declaration validated by the CEA upon receiving notification from a regulatory authority with jurisdiction over the Generator Owner of a material change in the circumstances that formed the basis for the Generator Cold Weather Constraint declaration to determine if it remains valid in accordance with Attachment 1.***"

Finally, the SRC recommends that Requirement R9 be revised to require the Generator Owner to submit the results of each constraint review to the CEA. This would provide the CEA additional insight into the overall state and usage of constraints within the industry, and may help the CEA stay informed of the overall pace of changes to freeze protection technology within the industry. It would also help NERC maintain a database of best practices and technological advancements.

Likes 0	

Dislikes 0	

Response

Thank you for your comment. NERC disagrees with the assertion that the proposed 36-month timeline is not responsive to the FERC directive. In paragraph 94 of the June 2024 Order, the Commission directed NERC to modify Requirement R8 Part 8.1 to implement more frequent reviews of Generator Cold Weather Constraint declarations to verify that the declaration remains valid. The Commission further stated, "We acknowledge that a more frequent review does impose some additional administrative burden to the GO to review the technological advancements that hindered its ability to winterize; nonetheless, a lengthy period between a Generator Cold Weather Constraint declaration review by the GO offers little incentive to timely adopt new freeze protection technologies." In the same order, the Commission directed NERC to revise the Generator Cold Weather Constraint criteria to address various concerns, including the concern that the definition "does not provide sufficient guidance on how widely a freeze protection technology must be deployed before it will be considered a "generally implemented" technology."

Proposed EOP-012-3 addresses these concerns by requiring a review that is significantly more frequent than approved EOP-012-2: reviews are required every 36 calendar months instead of every five calendar years (up to 71.99 calendar months). By shortening from the five calendar years currently provided, the 36 calendar month timeline provides a reasonable approach to meeting the Commission's directive without creating undue administrative burden to periodically monitor if Generator Cold Weather Constraints remain valid or if new technologies have become available that effectively obviate the originally validated constraint. Commenters generally agreed that a 36-month cycle better balanced the need to stay up to date with the administrative efforts that would be required to perform the review (See Jan. 27, 2025 Consideration of Comments at 148).

NERC further notes that, in addition to substantially shortening the time between constraint reviews, the Generator Cold Weather Constraint criteria themselves have been significantly revised and expanded. Whereas EOP-012-2 referred to "generally implemented" technologies, which could require keeping apace of market adaptation of technologies, proposed EOP-012-3 refers to more specifically to technologies that are unproven or are proven to be ineffective (*see* Attachment 1 "Case-by-Case" Item 4), or are not available on the commercial market for similar generating units in similar climate conditions (item 8). Given the feedback received through the development process about the pace of technological developments, NERC believes that a 36-month review period is more than adequate for addressing the concerns underlying the Commission's directive in the June 2024 Order.

NERC acknowledges the ISO/RTO's suggestion to balance the administrative burden of an entity having to perform continual reviews of developments in between the 36-month required reviews by only requiring an entity to undertake an intermediate review in response to a

notification by regulatory agency. However, NERC has declined to make the suggested modification to the standard. Based on the information provided to date, it does not appear that new freeze protection technologies are being deployed at such a rapid pace that such a requirement would be necessary to ensure that entities are staying reasonably up to date with available technologies. Further, NERC has concerns about the ambiguity and enforceability of such a requirement, particularly what constitutes a "notification…of a material change in the circumstances that formed the basis for the Generator Cold Weather Constraint declaration". For example, while the SRC example cites changes in technologies, constraints may be declared for reasons outside of NERC's reliability purview (e.g., noncompliance with health and safety requirements or standards, economic considerations, etc.). Clarifying what a "notification" might like in that context would be critical to avoid a continuous burden on the entity to monitor for changes solely to assess the validity of an EOP-012 constraint.

While NERC has not made the recommended changes to EOP-012 due to these considerations, NERC does appreciate the suggestion and will consider other, more targeted options in its reliability toolkit to help keep Generator Owners informed of new developments in freeze protection technologies that may warrant an out-of-cycle review of a declared constraint. For example, NERC has previously used its Alerts system to advance awareness of generator cold weather preparedness issues. NERC will also have opportunities to review the implementation of the standard, in particular the constraints provisions, to determine if further refinements to the criteria or requirements are needed for clarity or to advance reliability.

NERC also acknowledges the ISO/RTO's second suggestion to revise EOP-012-3 to require entities to submit the results of their reviews to the CEA. NERC is declining to make the suggested revision at this time. NERC presently has an ongoing generator cold weather data collection addressing matters identified by the Commission in the February 2023 Order and will be implementing an oversight framework for the review, validation, and approval of constraints as directed in the June 2024 Order. As NERC responded in a previous response to an SRC comment, NERC expects that if a constraint must be revised due to a change in facts or circumstances, it will be submitted to the CEA for review as if it was a newly declared constraint. Further, NERC will be continuing to perform compliance monitoring and enforcement of the EOP-012 standard consistent with the recommendations of the Winter Storm Elliott Report.

NERC recognizes the administrative burden reporting requirements can present to entities. As it is not clear to NERC there is a reliability need for this specific reporting given the other mechanisms in place or underway, NERC has declined to make the suggested revision to Requirement R9.

Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No

Document Name	
Comment	
See comment to question 8.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to your comment in question 8.	
Brian Lindsey - Entergy - 1,3,6	
Answer	Yes
Document Name	
Comment	
No Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mark Flanary - Midwest Reliability Organization - 10	
Answer	Yes
Document Name	
Comment	

MRO recommends clarifying R8.4. The sentence is excessively long and therefore susceptible to causing confusion. MRO recommends breaking the sentence into bullets. In its current form, it is hard to understand what R8.4 is trying to address or its objective.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Clarifying adjustments have been made to Requirement R8 Part 8.4 consistent with the suggestion of yours and others' comments. .	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Andrew Smith - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
AZPS agrees that the changes are responsive to the FERC directive.	

Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Richard Vendetti - NextEra Energy - 5	
Answer	Yes
Document Name	
Comment	
NextEra agrees that the modifications reflection in new Requirement R9 are responsive to the FERC directives. NextEra further aligns with EEI's proposed modifications below: **9.1.** If a Generator Cold Weather Constraint is determined to be no longer **valid needed**, then within six (6) calendar months of such determination, the Generator Owner shall **develop or notify the CEA that the update** Corrective Action Plan **is no longer required and submit updates in conformance with that determination** pursuant to Requirement R7.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. NERC has not made the suggested change, as it would appear to obligate the Generator Owner to submit the original Corrective Action Plan which is not generally required under Requirement R7. If a Corrective Action Plan extension is needed to complete corrective actions beyond the timelines provided in Requirement R7 now the constraint no longer applies, then the Generator Owner would need to submit an extension request. If a new constraint is needed due to changed facts or circumstances, then the Generator Owner would need to submit that constraint to the CEA.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	

Answer	Yes
Document Name	
Comment	
WECC supports the development of language for Requirement R9 and additional materials delivered by the drafting team in meeting the FERC directives.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Josh Schumacher - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation Segments 1, 3, 5, 6	
Answer	Yes
Document Name	
Comment	
However, Black Hills Corporation agrees with the suggested changes to subpart 9.1 provided by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support. Please see responses to EEI's comments.	
Kimberly Turco - Constellation - 5,6	
Answer	Yes
Document Name	

Comment	
Constellation supports comments of NAGF. Kimberly Turco, on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your support. Please see responses to NAGF's comments.	
Alison MacKellar - Constellation - 5,6	
Answer	Yes
Document Name	
Comment	
Constellation supports comments of NAGF. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your support. Please see responses to NAGF's comments.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	

Southern Company agrees with the proposed changes suggested by EEI in response to this question.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support. Please see responses to EEI's comments.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your response.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	

Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Devon Tremont - Utility Services, Inc. - 4 - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Richard Jackson - U.S. Bureau of Reclamation - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 5,6, Group Name Dominion	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Hayden Maples - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your response.	
Scott Thompson - PNM Resources - 1,3,5 - WECC,Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Nick Leathers - Ameren - Ameren Services - 1,3,5,6 - MRO,SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Christine Kane - WEC Energy Group, Inc. - 3,4,5,6, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your response.	
Zahid Qayyum - New York Power Authority - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Greg Sorenson - ReliabilityFirst - 10 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	
Document Name	

Comment
EEI does not object to the intent of the proposed modifications contained in Requirement R9 or its alignment to the directives contained in paragraph 94. However, the proposed language in subpart 9.1 is not sufficiently clear and suggest the following non-substantive changes to clarify the intent of subpart 9.1 (changes in boldface): **9.1.** If a Generator Cold Weather Constraint is determined to be no longer **needed**, then within six (6) calendar months of such determination, the Generator Owner shall **notify the CEA that the** Corrective Action Plan **is no longer required and submit updates in conformance with that determination** pursuant to Requirement R7.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. NERC has not made the suggested change, as it would appear to obligate the Generator Owner to submit the original Corrective Action Plan which is not generally required under Requirement R7. If a Corrective Action Plan extension is needed to complete corrective actions beyond the timelines provided in Requirement R7 now that the constraint no longer applies, then the Generator Owner would need to submit an extension request. If a new constraint is needed due to changed facts or circumstances, then the Generator Owner would need to submit that constraint to the CEA.

Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	
Document Name	

Comment
PacifiCorp supports MRO-NSRF comments.

Likes 0	
Dislikes 0	

Response
Thank you for your comment. Please see responses to MRO-NSRF's comments.

8. Under Section 321.5.1 of the NERC Rules of Procedure, the Board of Trustees is to consider whether any proposed standard d eveloped under that section is practical, technically sound, technically feasible, cost-justified and serves the best interests of reliability of the Bulk Power System, among other things. Considering the FERC directives provided above, please provide any other comments you wish the Board of Trustees to consider in whether to adopt proposed Reliability Standard EOP-012-3.

Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	
Document Name	
Comment	

Proposed modifications to NERC reliability standard EOP-012-2 requires some GOs (not all) that experience a Cold Weather Reliability Event, to develop a Corrective Action Plan CAP (without considering cost), and obtain approval of their CAP from their Regional Entity (RE).

This proposal and the current version are only applicable to GOs that are required to operate at any temperature below, or equal to, 32-degrees F. But, it is not applicable to GOs that are not required to operate below 32-degrees F. Furthermore, the standard footnote 9, in summary says GOs that are not required to operate at or below 32-degrees are exempt from this requirement, but maybe be called to operate anyway, without making any modifications to their Facilities and they do not have to develop a CAP if they have a Cold Weather Reliability Event.

First off, the standard lacks clarity as to who decides if a unit is required to operate during Cold Weather, FERC, NERC, the RE, the BA, the RC?

The current version of the standard and this proposal violates of the NERC Marketing Principle that states: A reliability standard shall not give any market participant an unfair competitive advantage. It requires some GOs to spend personnel time and money, along with capital dollars which increases their costs and thus market bid pricing 24/7. While others GOs are allowed to operate under the exact same operating weather conditions 24/7 and not have to spend or do anything.

NERC, by developing the current standard and endeavoring to make modifications to this standard, are making a Reliability must be available to run standard. By making requirements that force some GOs Facilities to be available, not just at their design temperature, but at newly calculated CCWTs.

This standard and NERCs proposed modifications to it, has requirements that make it a Resource Adequacy based standard. Thus, it violates the NERC marketing principle that states: Standards shall not define an adequate amount of, or require expansion of, bulk power system resources or delivery capability. NERC is forcing some GOs to increase their operating temperature ranges in order to increase delivery capability during Cold Weather periods.

There is no transparency since there is no provision to make available anonymized CAPs. NERC needs to make all entities CAPs available to all GOs. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. If NERC shared anonymized CAPs, it would not be violating the NERC Market Principle that states: A reliability standard shall not require the public disclosure of commercially sensitive information.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. With respect to your first comment, NERC responds that under proposed EOP-012-3 Requirement R7, a Generator Owner would not generally be required to obtain Compliance Enforcement Authority approval of Corrective Action Plans. If the Generator Owner needs an extension of time to complete corrective actions beyond the timeframes provided, then it would need to submit an extension request. If the Generator Owner determines that it will be unable to complete one or more of corrective actions to address the identified issue due to a qualifying circumstance described in Attachment 1, than it may declare a Generator Cold Weather Constraint and submit that constraint the Compliance Enforcement Authority for validation or pre-approval.

With respect to your second comment, NERC notes that Generator Owners that generally do not run in freezing temperatures are exempt from this requirement. If they are in fact able to run and are called to do so during an Emergency, they would be able to assist the grid in that emergency situation without losing their exemption. This has not changed in proposed EOP-012-3. NERC disagrees with the assertion that some Generator Owners would be allowed to run in freezing conditions at all times and not have to do anything, as that is contrary to the letter of the standard. Even the units that are exempt from some requirements are not exempt from others. Please refer to the approval proceedings for Reliability Standards EOP-012-1 and EOP-012-2 for the supporting rationale which discuss self-commitments and requirements to operate.

NERC disagrees that this standard violates the NERC Market Interface Principles. The Reliability Standard requires the same performance of all Generator Owners that self-commit or are required to operate in freezing temperatures. Each is expected to prepare properly for cold weather

and to understand their operating limitations, have operational capability to operate reliably in the extreme cold conditions they are reasonably likely to face, and to take action when experiencing major events at or above that temperature due to freezing. The general legality of the EOP-012 standard under Section 215 of the Federal Power Act was settled in the FERC proceeding approving EOP-012-1. NERC also responds that Requirement R7 does not require Generator Owners to share their Corrective Action Plans with other Generator Owners nor for NERC to publicize them. NERC may publish aggregated, anonymized information regarding Generator Cold Weather Constraints or Corrective Action Plan extension requests so entities would have transparency in to the types of requests and declarations that are being validated or approved; however, care would be taken to avoid publication of any information meeting the criteria for Confidential Information under the NERC Rules of Procedure which would include market sensitive information.	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	
Document Name	
Comment	
Tri-State supports MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see responses to MRO NSRF's comments.	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	
Document Name	
Comment	

PacifiCorp supports MRO-NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see responses to MRO NSRF's comments.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (SRC)	
Answer	
Document Name	
Comment	
The IRC SRC recommends that the Compliance Abeyance Period language in C.1.4 of the standard be revised to require entities that failed to correctly calculate the Extreme Cold Weather Temperature despite acting in good faith to complete a mitigation plan to correct the identified deficiencies. This will help enhance the overall efficacy of the standard, as the Extreme Cold Weather Temperature is a linchpin of the standard, and incorrect calculations have the potential to significantly undermine effective winterization of generation units.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The intent of the abeyance period is for entities to proactively take steps to ensure their Extreme Cold Weather Temperature calculations are accurate and reasonably supported, and to allow any issues that are identified to be addressed outside the formal enforcement process. To the extent good faith calculation issues are identified and the re-calculation results in a lower Extreme Cold Weather Temperature for the unit, the entity should take prompt action to ensure it is compliant with other requirements dependent on this calculation, including developing Corrective Action Plans as required under the standard where needed to provide additional capability.	

As the intent of the abeyance period is allow such issues to be addressed outside of the formal enforcement process for a time, NERC has declined to include the requirement to complete a mitigation plan, as that is a term defined to mean "an action plan developed by the Registered Entity to (1) correct a noncompliance with a Reliability Standard and (2) prevent re-occurrence of the violation."	
Zahid Qayyum - New York Power Authority - 1,3,5,6	
Answer	
Document Name	
Comment	
NYPA supports NAGF Comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the responses to NAGF's comments.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	
Document Name	
Comment	
Southern Company agrees with EEI's comments on Questions 8 recognizing NERC needs a standardized form to include all entities in North America.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. NERC agrees with this comment of EEI and is developing a standardized form.	
Christine Kane - WEC Energy Group, Inc. - 3,4,5,6, Group Name WEC Energy Group	
Answer	
Document Name	
Comment	
WEC Energy Group supports the comments of the NAGF as submitted.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see responses to NAGF's comments.	
Nick Leathers - Ameren - Ameren Services - 1,3,5,6 - MRO,SERC	
Answer	
Document Name	
Comment	
Ameren supports EEI's and NAGF's comments, with more support towards NAGF's comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the responses to EEI and NAGF's comments.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	

Answer	
Document Name	
Comment	

The NAGF believes that the proposed standard needs to include a cost/benefit evaluation or similar methodology to determine if a constraint is justified. This issue was raised by the NAGF during the technical conference and to this date, there has been no discussion of what is a reasonable cost justified threshold. The NAGF views this extreme cold weather issue as just another form of the resource adequacy issue and therefore should be treated as such. The ultimate goal of this standard is to ensure that the resources exist to meet the loads. We note that there is not a standard addressing how to meet peak loads if there is not sufficient capacity, but we are putting a requirement of the Generator Owners to ensure their resources perform without any means to pay for the costs that may be incurred to upgrade existing generation.

The NAGF notes that the proposed standard is not a design criterion. A design criterion would state that a generator that meets the design requirement, such as under R2 and R3, would not be at risk of a Corrective Action Plan due to a "freeze" event after running for 48 hours at a temperature below the ECWT and then experiences a GCWRE as temperatures begin to slowly warm. Regardless of any language in the Requirements, as currently structured, the number of hours operated below the generator's ECWT does not matter. This failure in the structure of the standard means it is not practical, technically sound or technically feasible. This issue must be addressed in the SAR discussed under Question 1 above.

Specific Requirement Issues:

Requirement 8.3 does not provide a means to appeal the CEA's decision that a constraint is invalid. NERC and the regions have suggested that the appeals process for a potential non-compliance would be available. The NAGF recommends that R8.3 be revised accordingly to address this issue.

In Requirement R1.1, the SDT made a change that is not addressing the FERC order and NAGF believes this change cause more uncertainty and therefore should be removed: "and adjustments utilized for missing or invalid hourly temperature data, if necessary,".

The NAGF requests that this language be removed and be replaced with more accurate and clear language under the efforts of the SAR discussed in Question 1.

Finally, the NAGF is concerned that NERC and the CEAs may not have the necessary expertise needed to determine if a constraint is valid or not. The NAGF suggests that the RSTC be assigned the review of declared constraints and the associated validity of them. The RSTC can assign this obligation to a subcommittee (either existing or stood up for this express purpose) as the RSTC is the recognized experts on technical matters at NERC.	
Likes 0	
Dislikes 0	

Response

Thank you for your comments. NERC responds to these comments as follows:

With respect to the comment about cost/benefit analysis, NERC responds that multiple event reports examining the causes of reliability events since 2011 have conclusively demonstrated the need for a strong Reliability Standard addressing generator preparedness for extreme cold conditions. Not being prepared to operate reliably during these conditions can have an enormous human and economic cost, as demonstrated most notably by the 2021 Winter Storm Uri event affecting Texas and the south central United States. While the EOP-012 standard has sought to balance cost effectiveness and avoid unreasonable outcomes, FERC specifically directed NERC to remove all references to "reasonable cost," "unreasonable cost," "cost," and "good business practices" from the EOP-012 standard. June 2024 Order at P 47. Consistent with FERC's guidance, NERC proposes to include a limited set of clearly defined circumstances which, in the opinion of the various industry subject matter experts that have provided input on this project, would generally constitute an acceptable economic constraint, subject to case-by-case review. Other circumstances, while not directly mentioning costs or economics, entail economic considerations indirectly (e.g., a corrective action that would require an entity to install new wind turbine blades solely to install blade de-icing technologies). To the extent further specific instances of unreasonable measures are identified, or a specific and auditable formula for identifying "unreasonable costs" is identified that is consistent with the overall goal of the EOP-012 standard, those recommendations may be considered for formal inclusion through the standard development process in a future project.

With respect to the comment about resource adequacy, NERC disagrees that generator cold weather preparedness is equivalent to resource adequacy and should be treated the same. There may be sufficient generating nameplate capacity available to meet loads; however, if that generation is not prepared to operate reliability during the extreme cold weather conditions that are reasonably likely to occur, the reliability of the grid will be jeopardized.

With respect to the comment about a Generator Cold Weather Reliability Event, the existence of a freezing issue at a temperature at or above the ECWT after a long period of cold weather operation suggests a performance issue. If the issue meets the criteria to be considered a Generator Cold Weather Reliability Event (e.g. cause is due to freezing of equipment or impacts of freezing precipitation on equipment within the Generator Owner's control and meets the impact criteria), it is appropriate and consistent with the goal of advancing generator cold weather reliability for the Generator Owner to develop a Corrective Action Plan to prevent future recurrence of this issue.

Regarding the recommendations for specific standard revisions:

NERC has declined to embed the appeals process for a constraint declaration within the standard. Reliability Standards set forth mandatory obligations for users, owners, and operators of the Bulk-Power System. Processes for appeals of determinations made regarding compliance with standards are properly maintained in the Compliance Monitoring and Enforcement Program documents.

Regarding the revision to Requirement R1.1, prior EOP-012-3 drafts added this language in response to previous comments suggesting that compliance may not be possible without a complete data set. *See* December 3, 2024 Consideration of Comments at 285 (NAGF comments: "While the SDT has significantly modified the document related to calculating the ECWT, and while the NAGF supports these modifications, **nothing in this document addresses the unreasonable position that some regions are taking to require a temperature reading for every hour in order to make an ECWT valid**. In the vast majority of cases, the GO is not in a position to have over 54,000 data points for any location, let alone every location. The GO in most cases must gather data from third party providers, and none of the data is perfect. This issue must be addressed through either Requirement R1 or modification to the ECWT definition. The NAGF looks forward to working with the SDT to address this identified concern."). See also January 27, 2025 Consideration of Comments at 190-191 (NAGF comments suggesting that the drafting team specify an "ECWT calculation is complete if the data source has greater than 90 percent of the expected data points and any gap greater than 168 hours is identified" and stating that the issue of missing hourly values in the ECWT calculation process "is an important issue for the NAGF membership.").

The language in Requirement R1.1 is intended to clarify that Generator Owners have flexibility to address missing or invalid data in their dataset, even if the present record does not support the inclusion of a specific metric for "completeness" as suggested in previous comments. To the extent the NAGF identifies such a metric, NAGF may submit a SAR to consider that suggestion through NERC's standard development process. NERC also notes that it has proposed an abeyance period for this requirement to support the collection of information that may inform improved guidance or future revisions to the standard or ECWT definition. In the interim, NERC believes the revision to Requirement R1.1 would address the compliance consideration identified in the comments quoted above.

With respect to the NAGF's suggestion to have the RSTC review constraints, NERC responds as follows. NERC recognizes the important role of the RSTC as providing subject matter expertise on technical matters. The RSTC would make an appropriate forum to discuss new winterization technologies, considerations for the adoption of winterization technologies, or additional changes to the Generator Cold Weather Constraints criteria included in EOP-012-3 Attachment 1 that should be recommended for future standards development projects. However, the RSTC is not an appropriate body to assess entity compliance with Reliability Standards, which is what the constraint review process fundamentally entails. That function is reserved to NERC as the ERO, or the Regional Entities with delegated authority to perform this function.

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	
Document Name	

Comment

EEI would like to note our appreciation for the changes made to EOP-012 that addressed the concerns cited in our earlier comments and those by our members during the technical conference. Additionally, EEI provides the following comments:

Concern: EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process Document

General Comment: While EEI appreciates the improvements made to the Generator Cold Weather CAP Extension and Constraint Process document, we do not agree that supporting process documents developed for EOP-012-3 should be outside of the approved Reliability Standard. The changes within process documents have direct impacts on entity compliance and any change to a process document that directly or indirectly impacts responsible entities compliance should be included in the Reliability Standard. Our concerns with this specific process document are as follows:

Enforceable Requirements Not Identified in EOP-012-3

1. Cap Extension Request Review Process: It states that "If a registered entity has determined that a Corrective Action Plan (CAP) developed in accordance with EOP- 012-3 Requirements R6 or R7 cannot meet the timetable provided per R6 Part 6.3 or R7 Part 7.1, then the entity will submit an extension request to the ERO Enterprise for approval no less than 60 calendar days prior to the original required CAP completion date." See Process Overview & Step 1

- While EEI does not object to the requirement, there is nothing in the requirements of EOP-012-3 that aligns this deadline. Moreover, it is unclear how this could be effectively enforced without it being included in EOP-012-3.

2. Step 3 (Registered Entity Notification/Cap Extension Request): If a CAP extension request was denied, the submitting entity may request, within five (5) calendar days of denial, a joint NERC and CEA review of the denial.

- EEI again notes that there are no deadlines contained in EOP-012-3 and either the deadline should be added to EOP-012-3 or include the process document as an attachment to this standard. Additionally, it is important to note that 5 days is a very short period of time to expect an entity to review and request a review of a time extension denial. It is also unclear if this 5 day deadline is inclusive of weekends and holidays. Regardless, EEI asks that GOs be given sufficient time to review and respond review and respond to the denial. For this reason, we ask that the process document be changed to provide GOs with 10-15 business days consistent with the NERC/CEA reviews.

Insufficient Guidance provided for Entity Data Submission

1. The process document supporting EOP-012-3 is inadequate to ensure entities provide the CEA complete and sufficient documentation with their CAP Extension Requests and Constraint Declarations.

- In the CAP Extension Request Review Process it states that Generator Owners are obliged and responsible for providing clear documentation with the extension request, yet there is nothing in the process document that might guide what might be expected. To address this concern, the Process document should be revised to include examples of the types of documentation that should be provided with a Cap Extension Request for synchronous resources, wind turbines and solar facilities. Without this level of guidance in the Process Document entity submission will vary causing delays and inconsistencies between regions in what is acceptable.
- Similar to the CAP Extension Process, the Constraint Review Process does not provide any details or examples of what would constitute "requisite data" necessary to meet the document requirements required by the CEA and NERC. And while we appreciate the Commission's desire that the process result in "consistent compliance and enforcement outcomes" (ref. P47 or FERC Order), this is only achievable through a clear process that sufficiently guides GOs in their Constraint declaration submissions. To do this, the process should be made clear what must be submitted, including examples of documents that would serve that outcome. This should be done for each type of resource. (i.e., synchronous resources, wind, solar facilities, etc.)

Align is not an appropriate tool for submission of Compliance Obligations under EOP-012-3

1. EEI does not agree that Align is a suitable tool for submission of compliance obligations under EOP-012-3. And is NERC proposing a separate module for these submittals? As currently configured, submittals within Align will be unduly burdensome and will co-mingle self-reports and mitigation plans regarding potential non-compliance items with operational reporting. We are additionally concerned that the use of Align will not just be burdensome to the reporting entities, but also to CEA staff leading to processing delays that might be avoided through the use of another system.

Alternatively, EEI suggests using modules similar to what is used for TADS and GADS be considered as a better alternative. Such a change would avoid security risks and concerns.

Process lacks Transparency sufficient to ensure consistent compliance and enforcement outcomes

1. The Process document lacks sufficient transparency and clarity regarding the process reviews and resulting outcomes when CAP extensions or Constraint Declarations are denied. To address this concern, criteria should be added to the document to ensure consistency in entity submission and guide CEA/NERC reviews. Additionally, the process should include periodic reviews by NERC that assess the consistency of declaration outcomes ensuring all regions have consistent outcomes.

Likes 0	
Dislikes 0	

Response

Thank you for your comments regarding the EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process. Several entities have submitted comments emphasizing the need for consistency and transparency in constraint evaluations across the ERO Enterprise. NERC agrees that ensuring consistency and transparency in these determinations will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to provide additional information on how this will be accomplished, and it is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner.

With respect to your comment regarding adding the process to the standard, NERC notes that Reliability Standards set forth requirements for users, owners, and operators of the BPS. The GO's responsibilities for the timely submission of Corrective Action Plan extension requests and Generator Cold Weather Constraints are specified in the standard. The specific processes that will be used to review such submissions fall under the purview of the ERO Enterprise CMEP and are not suitable for inclusion in a Reliability Standard. NERC believes the comments received during this posting generally support NERC revising and refining to this process as needed to provide clarity as to the ERO Enterprise's expectations in these reviews. NERC is committed to transparency in the execution of this process and will continue to keep stakeholders apprised of process improvements as they occur.

NERC has considered whether to include certain elements of the EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process as enforceable elements in the standard, such as a requirement for GOs to submit a Corrective Action Plan extension request at least 60 days in advance. NERC asks entities to submit Corrective Action Plan extension requests at least 60 days in advance to promote timeliness in reviews and avoid delays associated with the receipt of multiple last-minute requests. However, NERC recognizes that in certain situations the submittal timeframes may not be met due to circumstances beyond the control of a GO. The ERO Enterprise will prioritize efforts to help ensure timely processing of extension requests as these circumstances arise. However, while these efforts will be greatly assisted if entities are proactive in seeking any necessary validations or approvals as soon as they become aware of the need for one, NERC does not see a reliability need to impose a mandatory submission timing requirement at this time.

NERC appreciates the feedback on the length of time to request a NERC and CEA joint review of a denied Corrective Action Plan extension request. In response to this suggestion, NERC has revised this period to 15 calendar days.

NERC appreciates the suggestion for additional guidance and documentation that would be helpful for aiding entities in making submissions to the CEA, and to ensure consistency in determinations. As noted above, NERC is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner. Your suggestions will be considered as part of these efforts. NERC will also be performing regular oversight to ensure that determinations are being made in a consistent manner.

With respect to the comment regarding Align, thank you for the feedback. The Periodic Data Submittal module is being tested to support the process, which will provide separation for Enforcement activities. Future enhancements (including other tools) may be used if the Periodic Data Submittal module does not meet expectations. NERC will keep entities informed in the months ahead.	
Michael Goggin - Grid Strategies LLC - 5	
Answer	
Document Name	
Comment	
Without the revisions ACP recommends in response to Question 1, we do not believe Draft 3 of EOP-012-3 can be considered practical, technically sound, technically feasible, or cost-justified.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to question 1.	
Scott Thompson - PNM Resources - 1,3,5 - WECC,Texas RE	
Answer	
Document Name	
Comment	
PNM agrees with the comments provided by EEI.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. Please see the response to EEI's comments.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	
Document Name	
Comment	
During our review, ACES noticed a minor clerical inconsistency throughout this draft of EOP-012-3. The proposed language is inconsistent in how numbers are written. For example, Requirement R1 requires an action every five calendar years, whereas Requirement R1 Part 1.1.1 requires an action within six (6) calendar month. Thank you for the opportunity to comment.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Each of the specified timelines was developed with consideration to the periodicity for the required performance. Please refer ERO Enterprise CMEP Practice Guide, Implementation of "Annual" and "Calendar Month(s)" in the Reliability Standards.	
Hayden Maples - Evergy - 1,3,5,6 - MRO	
Answer	
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI), Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF), and the North American Generator Forum (NAGF) on question 8	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments. Please see responses to the EEI/MRO NSRF/NAGF's comments.	
Alison MacKellar - Constellation - 5,6	
Answer	
Document Name	
Comment	
Constellation supports comments of NAGF. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to NAGF's comments.	
Richard Jackson - U.S. Bureau of Reclamation - 1,5	
Answer	
Document Name	
Comment	
Reclamation does not agree that this standard is practical, technically sound, technically feasible, cost-justified and serves the best interests of reliability of the Bulk Power System. Comments provided on multiple drafts were not considered. Some examples of that are wind speed, precipitation, lack of temperature data, etc…. This standard will put undo administrative burden on industry without providing adequate weather analysis and protection measures, where required, on components that may be exposed as only 25 years of data are being considered. Also, possible rare weather events that are not predictable (i.e. a 500-year storm) are being ignored.	

Likes 0	
Dislikes 0	

Response

Thank you for your comments. All comments received during the development process were reviewed and given due consideration by the respective drafting teams, even if the suggested revisions of one or more commenters were not made or were made differently than recommended. If you feel a particular comment of yours was not addressed during the development process for EOP-012-3, please contact the NERC Director of Standards.

Reliability Standard EOP-012-3 sets the baseline minimum performance for reliable operations during extreme cold weather temperatures. The need for such a standard is well documented in reports examining the causes of multiple cold weather reliability events since 2011. Additional information on the elements identified in the comments (ECWT calculation, cold weather components, etc.) is available in the approval proceedings for EOP-012-1 and EOP-012-2. Entities may choose to exceed the minimum performance by considering 500-year winter storm conditions if they so chose.

Devon Tremont - Utility Services, Inc. - 4 - NA - Not Applicable

Answer	
Document Name	

Comment

Suggest NERC provide clarity on how a wind farm that has derated turbines going into a Generator Cold Weather Reliability Event (e.g., low wind availability) determines the possible derate percentage for determining if a GCWRE has occurred. Is this derate percentage calculated based on the nameplate capacity of the facility or the generation availability of facility going into an event (if less than nameplate capacity)?

Likes 0	
Dislikes 0	

Response

Thank you for your comment. This question was addressed in a recent 2024 Cold Weather Preparedness FAQ :

Q34: Event type 1, "forced derate of more than 10% of the total capacity" – is that total capacity of the unit based on its nameplate, the amount bid into the market at the time of forced derating, or another measure of total capacity?: A:" For a Generator Cold Weather Reliability Event, it is the capacity of the generating unit at the time of the event. That is, either its full capacity or a derated amount due to a documented preexisting maintenance/operational issue that limits capacity."	
Kimberly Turco - Constellation - 5,6	
Answer	
Document Name	
Comment	
Constellation supports comments of NAGF. Kimberly Turco, on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to NAGF's comments.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	
Document Name	
Comment	
The standard does little to increase reliability of the bulk electric system. The short and long-term burden of the high-cost investments (equipment upgrades, administrative and engineering/research) required to meet one-off low temperature events outweighs the benefit to overall reliability. There appears to be a lack of concern for overall resource adequacy and cost when focused on such a narrow scope.	

Expediting the deadline for this standard creates time pressure, limiting a thorough review process, resulting in inferior standard(s). MP align with both EEI and NAGF comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Multiple event reports examining the causes of reliability events since 2011 have conclusively demonstrated the need for a strong Reliability Standard addressing generator preparedness for extreme cold conditions. As discussed in the approval proceeding for EOP-012-1, the Extreme Cold Weather Temperature formula was intended to identify the extreme cold temperatures the entity is reasonably likely to face. The cost of not being prepared to operate reliably during these conditions can have an enormous human and economic cost, as demonstrated most notably by the 2021 Winter Storm Uri event affecting Texas and the south central United States. NERC remains committed to ensuring it has an effective standard in place to advance cold weather reliability, and it has worked diligently to address Commission directives for additional changes on the timelines set by the Commission. To the extent additional changes are identified in the future as necessary to ensure the standard's efficacy, NERC will promptly initiate the standards development process to make those changes.	
Josh Schumacher - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation Segments 1, 3, 5, 6	
Answer	
Document Name	
Comment	
Black Hills Corporation supports the additional comments provided by both EEI & NAGF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the responses to the comments provided by EEI and NAGF.	

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	
Document Name	
Comment	
It is apparent that compliance fear and other issues not in the FERC Order (e.g., ECWT concerns) played a large part in the balloting failures associated with this Standard and the resulting ROP Section 321 action. The ROP Section 321 path should not be utilized by industry as a way to disagree with FERC. The performance of the generation fleet during extreme cold temperature is the underlying reason a Standard was mandated. Standards are created to support reliable operations and should not be focused on compliance proofing. WECC supports the efforts of the DT in trying to balance the differences in opinions and agendas presented during the development of EOP-012-3.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. NERC appreciates the feedback provided throughout the standard development process.	
Richard Vendetti - NextEra Energy - 5	
Answer	
Document Name	
Comment	
NextEra would like to see industry visibility on the approval and denial of Cold Weather Constraints. NERC should be transparent in the release of this information, as all of the industry faces similar challenges in dealing with extreme cold weather and would benefit in understanding what type of constraints are being approved and denied by the CEA. This could be accomplished in a manner such as quarterly reports and CEA subcommittee meetings. The submitting entity need not be recognized within the reports, however the type of constraint with reasons for approval or denial should be stated.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. NERC has revised the EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to state that NERC may facilitate, for industry awareness, provision of aggregated anonymized constraint decisions to aid in submissions.	
Andrew Smith - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	
Document Name	
Comment	

AZPS agrees with comments submitted by EEI on behalf of their members on concerns with the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process Documents as listed below.

Concern: EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process Document

General Comment: While EEI appreciates the improvements made to the Generator Cold Weather CAP Extension and Constraint Process document, we do not agree that supporting process documents developed for EOP-012-3 should be outside of the approved Reliability Standard. The changes within process documents have direct impacts on entity compliance and any change to a process document that directly or indirectly impacts responsible entities compliance should be included in the Reliability Standard. Our concerns with this specific process document are as follows:

Enforceable Requirements Not Identified in EOP-012-3

1. Cap Extension Request Review Process: It states that "If a registered entity has determined that a Corrective Action Plan (CAP) developed in accordance with EOP- 012-3 Requirements R6 or R7 cannot meet the timetable provided per R6 Part 6.3 or R7 Part 7.1, then the entity will

submit an extension request to the ERO Enterprise for approval no less than 60 calendar days prior to the original required CAP completion date." See Process Overview & Step 1

- While EEI does not object to the requirement, there is nothing in the requirements of EOP-012-3 that aligns this deadline. Moreover, it is unclear how this could be effectively enforced without it being included in EOP-012-3.

2. Step 3 (Registered Entity Notification/Cap Extension Request): If a CAP extension request was denied, the submitting entity may request, within five (5) calendar days of denial, a joint NERC and CEA review of the denial.

- EEI again notes that there are no deadlines contained in EOP-012-3 and either the deadline should be added to EOP-012-3 or include the process document as an attachment to this standard. Additionally, it is important to note that 5 days is a very short period of time to expect an entity to review and request a review of a time extension denial. It is also unclear if this 5 day deadline is inclusive of weekends and holidays. Regardless, EEI asks that GOs be given sufficient time to review and respond review and respond to the denial. For this reason, we ask that the process document be changed to provide GOs with 10-15 business days consistent with the NERC/CEA reviews.
- · **Insufficient Guidance provided for Entity Data Submission**

1. The process document supporting EOP-012-3 is inadequate to ensure entities provide the CEA complete and sufficient documentation with their CAP Extension Requests and Constraint Declarations.

- In the CAP Extension Request Review Process it states that Generator Owners are obliged and responsible for providing clear documentation with the extension request, yet there is nothing in the process document that might guide what might be expected. To address this concern, the Process document should be revised to include examples of the types of documentation that should be provided with a Cap Extension Request for synchronous resources, wind turbines and solar facilities. Without this level of guidance in the Process Document entity submission will vary causing delays and inconsistencies between regions in what is acceptable.
- Similar to the CAP Extension Process, the Constraint Review Process does not provide any details or examples of what would constitute "requisite data" necessary to meet the document requirements required by the CEA and NERC. And while we appreciate the Commission's desire that the process result in "consistent compliance and enforcement outcomes" (ref. P47 or FERC Order), this is only achievable through a clear process that sufficiently guides GOs in their Constraint declaration submissions. To do this, the process should be made clear what must be submitted, including examples of documents that would serve that outcome. This should be done for each type of resource. (i.e., synchronous resources, wind, solar facilities, etc.)

Process lacks Transparency sufficient to ensure consistent compliance and enforcement outcomes

1. The Process document lacks sufficient transparency and clarity regarding the process reviews and resulting outcomes when CAP extensions or Constraint Declarations are denied. To address this concern, criteria should be added to the document to ensure consistency in entity submission and guide CEA/NERC reviews. Additionally, the process should include periodic reviews by NERC that assess the consistency of declaration outcomes ensuring all regions have consistent outcomes.

Likes 0	
Dislikes 0	

Response

Thank you for your comment. Please see the response to the EEI comment below:

Thank you for your comments regarding the EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process. Several entities have submitted comments emphasizing the need for consistency and transparency in constraint evaluations across the ERO Enterprise. NERC agrees that ensuring consistency and transparency in these determinations will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to provide additional information on how this will be accomplished, and it is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner.

With respect to your comment regarding adding the process to the standard, NERC notes that Reliability Standards set forth requirements for users, owners, and operators of the Bulk-Power System. The Generator Owner's responsibilities for the timely submission of Corrective Action Plan extension requests and Generator Cold Weather Constraints are specified in the standard. The specific processes that will be used to review such submissions fall under the purview of the ERO Enterprise Compliance Monitoring and Enforcement Program and are not suitable for inclusion in a Reliability Standard. NERC believes the comments received during this posting generally support NERC revising and refining to this process as needed to provide clarity as to the ERO Enterprise's expectations in these reviews. NERC is committed to transparency in the execution of this process and will continue to keep stakeholders apprised of process improvements as they occur.

NERC has considered whether to include certain elements of the EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process as enforceable elements in the standard, such as a requirement for Generator Owners to submit a Corrective Action Plan extension request at least 60 days in advance. NERC asks entities to submit Corrective Action Plan extension requests at least 60 days in advance to promote timeliness in reviews and avoid delays associated with the receipt of multiple last minute requests. However, NERC recognizes that in certain situations the submittal timeframes may not be met due to circumstances beyond the control of a GO. The ERO Enterprise will prioritize efforts to help ensure timely processing of extension requests as these circumstances arise. However, while these efforts will be greatly assisted if entities are proactive in seeking any necessary validations or approvals as soon as they become aware of the need for one, NERC does not see a reliability need to impose a mandatory submission timing requirement at this time.

NERC appreciates the feedback on the length of time to request a NERC and CEA joint review of a denied Corrective Action Plan extension request. In response to this suggestion, NERC has revised this period to 15 calendar days.

NERC appreciates the suggestion for additional guidance and documentation that would be helpful for aiding entities in making submissions to the CEA, and to ensure consistency in determinations. As noted above, NERC is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of constraints that are and are not being validated and the types of documentation that would be most helpful to the ERO Enterprise to making these determinations in a timely manner. Your suggestions will be considered as part of these efforts. NERC will also be performing regular oversight to ensure that determinations are being made in a consistent manner.

With respect to the comment regarding Align, thank you for the feedback. The Periodic Data Submittal module is being tested to support the process, which will provide separation for Enforcement activities. Future enhancements (including other tools) may be used if the Periodic Data Submittal module does not meet expectations. NERC will keep entities informed in the months ahead.

Ruchi Shah - AES - AES Corporation - 5	
Answer	
Document Name	
Comment	

R2.1 allows for CAP to add new or modify existing or previously planned freeze protection measures for new generating unit that enter commercial operation between 10/1/2027 and 3/31/2028. However, it is not clear what is required to be documented in the CAP (similar to what is listed under R7). Although the CAP in R2.1 needs to be implemented and completed by 4/1/2028, will the CAP be required to document a list of corrective actions, updates to cold weather preparedness plan or identification of operating limitations while the CAP is being implemented? We request NERC to provide clarity on this via changes to R2 Part 2.1 or a guidance document.

AES US Renewables believe that R8.4 is unnecessary and will add to administrative burden that does not provide any additional reliability benefit. A Generator Cold Weather Constraint that has been approved by the CEA and will be applicable to another Generator Cold Weather Reliability Event or a similar generating unit does not require the approved constraint declaration to be documented and notified to the CEA. As the ERO is required by FERC to submit section 1600 data annually, these events and their associated CAPs and constraint declarations can be provided to the ERO at that time. An alternative to R8.4 is to develop a section 1600 data request similar to that of MIDAS (for protection system operations) where entities will be able to input their cold weather events, corresponding CAP information and any constraint declaration that was used to address any of the corrective actions. This avoids having a purely administrative burden on registered entities that can create unnecessary compliance risks.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.

With respect to your first comment, NERC has received several comments on this Requirement R2 suggesting further revisions or clarifications, or identifying issues with the drafted language as it applies in non-U.S. jurisdictions. After considering each of these comments, NERC determined that the matter that previous drafts sought to address through the various date-based distinctions in Requirement R2 is fundamentally an implementation matter. As an implementation matter, it would be better addressed through revisions to the implementation plan.

Therefore, Requirement R2 is revised to provide that a GO entering commercial operation on or after October 1, 2027 shall either implement the required capability or declare a Generator Cold Weather Constraint, if applicable. The implementation plan is revised to clarify that an entity entering commercial operation after this October 1, 2027 date shall comply with Requirement R2 upon entering commercial operation, unless the exception formerly in Requirement R2 Part 2.1 applies. If an entity designed its unit prior to June 29, 2023 but entered commercial

operation between October 1, 2027 and March 31, 2028, the entity shall have until April 1, 2028 to comply with Requirement R2 relating to implementing required capability. The requirement to implement a short-lived Corrective Action Plan is removed. With respect to your second comment, NERC has received several suggestions during this comment period to clarify Requirement R8 Part 8.4 and has revised the language to clarify the actions that are required. Specifically, this Requirement Part is intended to address the situation where a Generator Owner experiences repeat Generator Cold Weather Reliability Events due to the same cause, and the corrective action(s) to address that cause are already addressed by a validated Generator Cold Weather Reliability Constraint. The notification to the CEA would be in lieu of pursuing validation of an identical Generator Cold Weather Constraint every time an event occurs.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	
Document Name	
Comment	
AEPC has signed on to ACES comments. See ACES comments. Thank you for the opportunity to comment.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to the ACES comments.	
Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	
Answer	
Document Name	
Comment	

SMUD and BANC appreciate NERC's inclusion of the Compliance Abeyance Period language in Section C of the EOP-012-2 Standard. This thoughtful addition reflects a commitment to enhancing the ERO Compliance Monitoring and Enforcement Program processes, that were proposed by NERC last year. Given that we were only permitted to comment on these proposed changes to EOP-012-2 without the opportunity for a ballot, we commend NERC for taking this progressive step as it may instill greater confidence among entities adopting this revised Standard, even if it may not be flawless.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	
Document Name	
Comment	
FirstEnergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Brian Lindsey - Entergy - 1,3,6	
Answer	
Document Name	

Comment	
No Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	
Document Name	
Comment	
Duke Energy supports and agrees with EEI comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see the responses to EEI's comments.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	
Document Name	
Comment	

For utilities that routinely operate reliably in seasonal cold weather months, EOP12-3 will not improve BES reliability. It will increase the administrative burden without improving BES reliability.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. NERC disagrees. Multiple cold weather events have demonstrated that the reliability of the Bulk-Power System depends on continued vigilance during extreme cold weather.	
Thomas Foltz - AEP - 3,5,6	
Answer	
Document Name	
Comment	
If the CEA does not agree with the substance of the declaration in R8 and declares it invalid, how would that decision be dealt with in the existing requirements or process? In addition, how soon would the CEA have to provide their determination? In general, there appears to be a lack of clarity regarding the timeline that occurs between R8.1 and R8.3. R8.4 requires that a Generator Owner declaring a Generator Cold Weather Constraint "document and provide notice to the CEA" of the circumstances described in the obligation, however there is no mention of how soon that documentation and notice be given, nor any timeline that the CEA would hold to in providing their response. AEP requests that clarity be added to R8.4 regarding when the GO must provide their documentation and notification, as well as insight be added to the Technical Rationale document regarding what the timeline is for the CEA's response. If the CEA has a list of constraints, it follows that they would likely be maintaining that list as well for all the entities involved. And if they are maintaining it, what would the process be for aligning their own maintained list with the one that each GO is maintaining on *their* end for their own assets? AEP is confused by certain aspects of R8.4, including what its primary intent might be and what it is designed to accomplish. For example, if	

there is already a constraint in place, why would it be necessary to include "one or more corrective actions to address" an underlying cause? Also, what is being requested in R8.4 appears to be redundant with the Section 1600 Data Requests currently being drafted regarding cold weather, so care should be taken to ensure there is no duplications of effort or obligations. We believe that additional content added to the Technical Rationale document would be beneficial to further explain the intent-of and reasoning-behind R8.4. That being said, we believe that R8.4, if it were retained, could be more clearly written while still retaining its (perceived) meaning. As a result, AEP recommends revising R8.4 as follows:

8.4 Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event with the same cause as that of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause are addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit.

In addition, it should be noted that only those causations within the Generator Owner's control would be subject to the root cause analysis. As a result, fuel supply issues (were they found to be a cause) would not be included in the information provided.

Section E "Associated Documents" specifies the "Calculating Extreme Cold Weather Temperature" document, but does not include a hyperlink to it. We suggest that a hyperlink be added for this document, perhaps as a footnote or similar.

Requirement R2.2 states, "Implement freeze protection measures…" and is inferred by measure M2 that the freeze protection measures need to be implemented by the commercial operation date (COD). We recommend the phrase be revised to state "Implemented freeze protection measures…" to reflect the work is done by COD.

Requirement R3 states, "Implement freeze protection measures…; or Develop a Corrective Action Plan…". We recommend the phrase be revised to state "Implemented freeze protection measures…" to reflect the work is done or if not, a CAP is required to complete the work.

Requirement R6 is not clear how a prior approved Generator Cold Weather Constraint is to be addressed when a Generation Cold Weather Reliability Event occurs where the root cause of the event is covered by the constraint. Is a CAP required or does the GO just follow the R8.4?

Likes 0	
Dislikes 0	

Response

Thank you for your comments. NERC has revised the EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process to provide additional clarifications and explanation.

As provided in the process, the CEA will complete its review following receipt of all necessary information: 10 calendar days for "known" constraints, and 45 days for case-by-case constraints. Denial of a Generator Cold Weather Constraint requires the entity to update its Corrective Action Plans with corrective actions that will be completed within the timetables in Requirement R6 Part 6.3 or Requirement R7 Part 7.1. Communication efforts between the submitting entity and the CEA related to updates of the Corrective Action Plan and timetables resulting from a denial of a Generator Cold Weather Constraint are strongly encouraged.

NERC has received several suggestions during this comment period to clarify this Requirement R8 Part 8.4 and has revised the language to clarify the actions that are required. Specifically, this Requirement Part is intended to address the situation where a Generator Owner experiences repeat Generator Cold Weather Reliability Events due to the same cause, and the corrective action(s) to address that cause are already addressed by a validated Generator Cold Weather Reliability Constraint. The notification to the CEA would be in lieu of pursuing validation of an identical Generator Cold Weather Constraint every time an event occurs.

With respect to the suggestion to include a hyperlink, NERC prefers to include information regarding supporting documents in lieu of hyperlinks which may become outdated. NERC will work to ensure that supporting information is available on the One Stop Shop or other areas of the NERC website so they may readily be found by stakeholders.

Regarding the recommendations to revise Requirement R2 Part R2.2 and Requirement R3, NERC has substantially revised Requirement R2, but maintains the present tense in both requirements as it believes it serves the purpose better.

With respect to the question regarding Requirement R6, if a unit experiences a Generator Cold Weather Reliability Event, an analysis should be performed and actions updated as needed. Updates to existing Corrective Action Plans are addressed by footnote 12 in the revised draft. If the Generator Owner determines the event is due to the same root cause as a prior event, and a corrective action to address the root cause is already covered by a validated constraint, the Generator Owner should then follow Requirement R8 Part 8.4 as revised.

Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	

Document Name	2024-03_Unofficial_Comment_Form_EOP-012-3_321 MRO_NSRF_Final.docx

Comment

MRO NSRF does also appreciate the opportunity to comment, but the lack of ballot and short turnaround time from closing to the Board of Trustees meeting does not instill confidence much input will be utilized.

MRO NSRF recognizes the tight timelines and specific guidelines prescribed by FERC, but is concerned that reliability impacts may result from some of the changes compared to EOP-012-2.

To that point, MRO NSRF would suggest that NERC review the dates of R2, as currently written it would seem that all generating units that "contractually committed to design criteria" prior to June 29, 2023 but does enter commercial operation until after March 21, 2028 are not subject to any compliance obligation under R2. While there will likely be very few generating units that fall under this oversight, this is illustrative of MRO NSRF's concern regarding developing Standards on such extremely tight timelines.

Requirement 2 has the bullet: "Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8." For clarity, suggest adding, "Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8." To requirement 3.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. NERC appreciates the feedback and comments received through this NERC Rules of Procedure Section 321.5 public comment process. NERC has given every comment received during this comment period due consideration in the development of the final proposed EOP-012-3 standard, and responds to your comments below as follows.

With respect to the comment on Requirements R2, NERC has received several comments on Requirement R2 suggesting further revisions or clarifications, or identifying issues with the drafted language as it applies in non-U.S. jurisdictions. After considering each of these comments, NERC determined that the matter that previous drafts sought to address through the various date-based distinctions in Requirement R2 is fundamentally an implementation matter. As an implementation matter, it would be better addressed through revisions to the implementation plan.

Therefore, Requirement R2 is revised to provide that a Generator Owner entering commercial operation on or after October 1, 2027 shall either implement the required capability or declare a Generator Cold Weather Constraint, if applicable. The implementation plan is revised to clarify that an entity entering commercial operation after this October 1, 2027 date shall comply with Requirement R2 upon entering commercial operation, unless the exception formerly in Requirement R2 Part 2.1 applies. If an entity designed its unit prior to June 29, 2023 but entered commercial operation between October 1, 2027 and March 31, 2028, the entity shall have until April 1, 2028 to comply with Requirement R2 relating to implementing required capability.

NERC believes that this approach would avoid the appearance of any gaps in standard effectiveness.

With respect to the suggestion to revise Requirement R3, NERC has declined to make this suggestion for the following reason. Under Requirement R3, generating units that are unable to implement the required capability are required to develop a Corrective Action Plan. The requirements for such Corrective Action Plans are contained in Requirement R7. That requirement provides that a Generator Owner shall document any Generator Cold Weather Constraints (i.e. any condition that would preclude the Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components) in accordance with Requirement R8. In previous development proceedings NERC considered suggestions to include reference to constraints in Requirement R2; however, the placement in the Corrective Action Plan requirement is intended to reinforce that a constraint would preclude implementation of one or more corrective actions; it would not excuse the Generator Owner from developing the Corrective Action Plan, implementing the corrective actions it may feasibly implement, or updating operating limitations or cold weather preparedness plans.

Because the Commission directed that new generating units should not have the ability to implement a Corrective Action Plan post commercial operation, Requirement R2 specifies that they must either have the required capability or declare a Generator Cold Weather Constraint that would preclude them from doing so.

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

This is the Final posting pending Board approval.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	July 17, 2024
SAR posted for comment	July 18, 2024 – August 16, 2024
20-day formal comment period with initial ballot	October 17, 2024 – November 5, 2024
18-day formal comment period with additional ballot	December 3, 2024 – December 20, 2024
45-day comment period	January 27, 2025 – March 12, 2025

Anticipated Actions	Date
Board adoption	April 4, 2025

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would be expected to result in improved generating unit performance during cold temperatures.

Previously Approved Terms

This section includes previously approved terms from EOP-012-1 and EOP-012-2. It is included to help with drafting and the posting of EOP-012-3.

Extreme Cold Weather Temperature – The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 01/01/2000 through the date the temperature is calculated.

Generator Cold Weather Critical Component – Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

Fixed Fuel Supply Component – Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

A. Introduction

1. **Title:** Extreme Cold Weather Preparedness and Operations

2. **Number:** EOP-012-3

3. **Purpose:** To address the effects of operating in extreme cold weather by ensuring each Generator Owner has developed and implemented plan(s) to mitigate the reliability impacts of extreme cold weather on its applicable generating units.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Generator Owner

   4.1.2. Generator Operator

   4.2. Facilities:

   4.2.1. Bulk Electric System (BES) generating units. For purposes of this standard, the term "generating unit" subject to these requirements refers to the following BES resources:

   4.2.1.1. A Bulk Electric System generating resource identified in the BES definition, Inclusion I2 and I4; or

   4.2.1.2. A Blackstart Resource, identified in the BES definition, Inclusion I3.

5. **Effective Date:** See Implementation Plan for Project 2024-03.

B. Requirements and Measures

R1. At least once every five (5) calendar years, each Generator Owner shall, for each of its applicable generating unit(s): [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]

1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable generating unit(s) and identify the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, if necessary; and

1.1.1. If the recalculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation, and if new corrective actions are needed to provide the required operational capability described in Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) calendar months of the recalculation.

1.2. Identify generating unit(s) cold weather data, to include:

1.2.1. Generating unit(s) operating limitations in cold weather to include:

1.2.1.1. Capability and availability;

1.2.1.2. Fuel supply and inventory concerns;

1.2.1.3. Start-up issues;

1.2.1.4. Fuel switching capabilities; and

1.2.1.5. Environmental constraints.

1.2.2. Generating unit(s) minimum:

- Design temperature, and if available, the concurrent wind speed and precipitation;
- Historical operating temperature at least one hour in duration, and if available, the concurrent wind speed and precipitation; or
- Current cold weather performance temperature determined by an engineering analysis, which includes the concurrent wind speed and precipitation.

M1. Each Generator Owner will have evidence documenting its Extreme Cold Weather Temperature calculation, including the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, and design information, operating data, or engineering analysis that supports its generating unit minimum temperature.

R2. Applicable to generating units that begin commercial operation[1] on or after October 1, 2027[2]: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[3] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or
- Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R2, or it has declared a Generator Cold Weather Constraint for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature under Requirement R1 Part 1.2.2 which is equal to or less than the generating unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and Generator Cold Weather Constraints (if applicable).

R3. Applicable to generating unit(s) in commercial operation prior to October 1, 2027:[4]Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[5] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature; or

[1] Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing.

[2] In non-U.S. jurisdictions, this will be the date established by the Applicable Governmental Authority.

[3] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[4] In non-U.S. jurisdictions, this will be the date established by the Applicable Governmental Authority.

[5] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

- Develop a Corrective Action Plan to add new or modify existing freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature.

M3. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R3, or it has developed a Corrective Action Plan for the identified issues. Acceptable evidence may include, but is not limited to, the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature per Part 1.2.2 which is equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and Corrective Action Plan(s).

R4. Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness plan(s) shall include the following, at a minimum: *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. The lowest calculated Extreme Cold Weather Temperature for each generating unit, as determined in Requirement R1;[6]

4.2. The generating unit cold weather data, as determined in Requirement R1, Part 1.2;

4.3. Documentation identifying Generator Cold Weather Critical Components;

4.4. Documentation of freeze protection measures implemented on Generator Cold Weather Critical Components that includes measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain);

4.5. Annual inspection and maintenance of generating unit(s) freeze protection measures implemented on Generator Cold Weather Critical Components.

M4. Each Generator Owner will have evidence documenting that its cold weather preparedness plan(s) was implemented and maintained in accordance with Requirement R4. Examples of documentation to demonstrate a cold weather preparedness plan may include existing operating procedures, plans, checklists, or processes. Examples of documentation, to demonstrate inspections and maintenance have been completed, may include, but are not limited to, completed work order(s) from the Generator Owner's work management system and/or freeze protection checklists identifying the measures inspected and maintained for the Generator Cold Weather Critical Components.

R5. Each Generator Owner, in conjunction with its Generator Operator, shall identify the entity responsible for providing generating unit-specific training, and that identified entity shall provide annual training to the maintenance and operations personnel, as

[6] Generator Owners shall include the lowest calculated Extreme Cold Weather Temperature for the unit, even where subsequent periodic re-calculations under Requirement R1 Part 1.1 cause an increase in the Extreme Cold Weather Temperature.

applicable, responsible for implementing the cold weather preparedness plan(s) developed pursuant to Requirement R4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*

M5. Each Generator Operator or Generator Owner will have documented evidence that the applicable personnel completed annual training of the Generator Owner's cold weather preparedness plan(s). This evidence may include, but is not limited to, documents such as personnel training records, training materials, date of training, agendas or learning objectives, attendance at pre-work briefings, review of work order tasks, tailboards, attendance logs for classroom training, and completion records for computer-based training in fulfillment of Requirement R5.

R6. Each Generator Owner shall, after experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[7] develop and implement[8] a Corrective Action Plan(s) to address identified freezing issues as follows: *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

6.1. The Generator Owner shall develop a Corrective Action Plan for the generating unit that experienced a Generator Cold Weather Reliability Event no later than prior to the first day of the first December following the Generator Cold Weather Reliability Event.[9]

6.2. The Generator Owner shall conduct a review of other generating unit(s) in its fleet with the same or similar equipment as the affected generating unit to determine if any of those generating unit(s) are susceptible to the identified freezing issues. If corrective actions are needed, the Generator Owner shall develop or update a Corrective Action Plan to address the other generating unit(s). This review and, if applicable, the development or update of any Corrective Action Plan(s), shall be completed no later than 12 calendar months following the Generator Cold Weather Reliability Event.

6.3. For each Corrective Action Plan, the Generator Owner shall include at a minimum:

6.3.1. A summary of the identified cause(s) of the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;

[7] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[8] If a Generator Owner has previously experienced a Generator Cold Weather Reliability Event and developed a Corrective Action Plan for the generating unit or units under Requirement R6 Parts 6.1 or 6.2, the Generator Owner may review and update its existing plan(s) in lieu of developing a new plan.

[9] For events that occur in September, October, or November, the timetable shall specify completion prior to December 1 of the following calendar year.

6.3.2. A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures;

6.3.3. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed;

6.3.4. A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required; and

6.3.5. A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows:

6.3.5.1. For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.[10]

6.3.5.2. For other generating unit(s) owned by the Generator Owner, within 24 calendar months of completing the review required in Part 6.2, or no later than 36 calendar months following the Generator Cold Weather Reliability Event.

6.4 If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval. The submitted Corrective Action Plan extension request shall include the following:

6.4.1. An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner;

6.4.2. Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and

6.4.3. Updated timetable for implementing the selected actions in Part 6.3.2.

6.5 The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, as applicable.

M6. Each Generator Owner will have dated evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event for applicable unit(s) in accordance with Requirement R6. Acceptable evidence may include, but is not limited

[10] For events that occur in September, October or November, the timetable shall specify completion prior to December 1 of the following calendar year.

to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraint(s).

R7. Each Generator Owner that is required to develop a Corrective Action Plan under Requirements R1, R3, or R9 shall develop and implement the Corrective Action Plan in accordance with the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

7.1. For each Corrective Action Plan, the Generator Owner shall include at a minimum the following:

7.1.1. A list of any actions that require new freeze protection measures, with a timetable specifying completion of such measures within 48 calendar months of completing development of the Corrective Action Plan;

7.1.2. A list of any actions that remedy issues with existing freeze protection measures with a timetable specifying completion of such measures within 24 calendar months of completing development of the Corrective Action Plan (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures);

7.1.3. A description of updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; and

7.1.4. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed.

7.2. If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R7 Part 7.1 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following:

7.2.1. An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.2.2. Revisions to the selected actions in Parts 7.1, if any, including utilization of operating procedures, if applicable; and

7.2.3. Updated timetable for implementing the selected actions in Part 7.1.

7.3. The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8.

M7. Each Generator Owner shall have dated evidence that it developed and implemented a Corrective Action Plan for applicable unit(s) in accordance with Requirement R7. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraints.

R8. Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

8.1. Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows:

- For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or
- For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable.

8.2. Update the operating limitations under Requirement R1 Part R1.2 if applicable;

8.3. If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2;

8.4. Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event with the same cause of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause is addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit.

M8. Each Generator Owner shall have dated evidence that demonstrates it performed the actions in accordance with Requirement R8. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): a copy of the Generator Cold Weather Constraint declaration, evidence the declaration was provided to the CEA in accordance with the specified timeframe, records that document update(s) to the operating limitations, as needed, updates to the Corrective

Action Plan(s), if applicable, and documentation and notice to the CEA of subsequent Generator Cold Weather Reliability Events, if applicable.

R9. The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

9.1 If a Generator Cold Weather Constraint is determined to be no longer valid, then within six (6) calendar months of such determination, the Generator Owner shall develop or update a Corrective Action Plan pursuant to Requirement R7.

M9. Each Generator Owner shall have dated evidence that demonstrates it reviewed Generator Cold Weather Constraints in accordance with Requirement R9. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the performance of the review within the required timeframe, records that demonstrate that a Corrective Action Plan was developed or updated within the required timeframe (if applicable).

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" (CEA) means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation.

- The Generator Owner shall retain data or evidence to support its current Extreme Cold Weather Temperature calculation and generating unit cold weather data, plus each calculation or revision since the last audit, for Requirement R1 and Measure M1.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R2 or R3 is complete, whichever timeframe is greater, for Requirements R2 and R3 and Measures M2 and M3. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall retain the current cold weather preparedness plan(s), as evidence of review or revision history, plus each version issued since the last audit and evidence of compliance since the last audit for Requirement R4 and Measure M4.
- The Generator Owner or Generator Operator shall keep data or evidence to show compliance for three years for Requirement R5 and Measure M5.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extensions (if applicable), under Requirement R6 is complete, whichever timeframe is greater, for Requirement R6 and Measure M6. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extension (if applicable), under Requirement R7 is complete, whichever timeframe is

greater, for Requirement R7 and Measure M7. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.

- The Generator Owner shall maintain data or evidence to support its current Generator Cold Weather Constraint declaration(s), plus each revision since the last audit, for Requirement R8 and Measure M8.
- The Generator Owner shall maintain data or evidence to support that it reviewed each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months since the last audit, for Requirement R9 and Measure M9.

1.3. Compliance Monitoring and Enforcement Program: "Compliance Monitoring Enforcement Program" or "CMEP" means, depending on the context (1) the NERC Compliance Monitoring and Enforcement Program (Appendix 4C to the NERC Rules of Procedure) or the Commission-approved program of a Regional Entity, as applicable, or (2) the program, department or organization within NERC or a Regional Entity that is responsible for performing compliance monitoring and enforcement activities with respect to Registered Entities' compliance with Reliability Standards.

1.4. Compliance Abeyance Period: From the effective date of Reliability Standard EOP-012-3 until October 1, 2027, the CEA will not pursue an action under Sections 4A.0 or 5.0 of Appendix 4C to the Rules of Procedure for a failure to comply with Reliability Standard EOP-012-3 Requirement R1 Part 1.1 with respect to the calculation of the Extreme Cold Weather Temperature for an applicable generating unit, or any other failure to comply resulting from an incorrect calculation of the Extreme Cold Weather Temperature for that generating unit, against any entity acting in good faith to comply with the standard in accordance with the relevant implementation plan. "Good faith" in this context refers to a sincere intention to comply with Reliability Standard EOP-012-3 regarding all requirements based on the calculation of the Extreme Cold Weather Temperature for each applicable generating unit, following a reasonable and serious assessment by the entity in determining how this Reliability Standard should be applied to its particular facts and circumstances. Entities shall participate in any compliance monitoring activities undertaken by the CEA during this abeyance period and submit documentation as requested.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.
R2.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not declare a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not declare a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not declare a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not declare a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.
R3.	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection	The Generator Owner did not have freeze protection

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	measure(s) meeting the criteria in Requirement R3 for 5% or less of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for 5% or less of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units.	measure(s) meeting the criteria in Requirement R3 for more than 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 20% of its applicable units.
R4.	The Generator Owner implemented a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable parts within Requirement R4.	The Generator Owner maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.
R5.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	described in Requirement R5 to the greater of: • one applicable personnel for a single generating unit; or • 5% or less of its total applicable personnel.	described in Requirement R5 to the greater of: • two applicable personnel for a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	described in Requirement R5 to the greater of: • three applicable personnel for a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	described in Requirement R5 to the greater of: • four or more applicable personnel for a single generating unit; or • more than 15% of its total applicable personnel.
R6.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 12 but fewer than 15 calendar months after the Generator Cold Weather Reliability Event.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 15 but fewer than 18 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirement R6, but it failed to contain one of the elements in Requirement R6, Part 6.3.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 18 but fewer than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirements R6, but it failed to contain two of the elements in Requirement R6, Part 6.3.	The Generator Owner failed to develop a Corrective Action Plan where required under Requirement R6. OR The Generator Owner developed a Corrective Action Plan where required under Requirement R6, but failed to implement it. OR The Generator Owner failed to conduct a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, or the Generator Owner

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
			OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable), but it did not include one of the required elements.	conducted the review, but it was conducted more than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan, but failed to contain three or more of the elements in Requirement R6, Part 6.3. OR The Generator Owner exceeded the timetables specified for completion in Requirement R6, Part 6.3.5, but did not submit a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable). OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.4 (if applicable), but it did not

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				include two or more of the elements in Requirement R6, Part 6.4. OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s), in accordance with Requirement R6, Part 6.5.
R7.	N/A	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include a description of updates to the cold weather preparedness plan and identification of operating limits as required in Requirement R7, Parts 7.1.3 and 7.1.4.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include one of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include two or more of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
			it did not include one of the required elements.	it did not include two or more of the required elements. OR The Generator Owner failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable). OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) in accordance with Requirement R7 Part 7.3.
R8.	The Generator Owner declared a Generator Cold Weather Constraint and submitted it to the CEA but it did not do so within the timeframe provided in Requirement R8 Part 8.1.	The Generator Owner declared a Generator Cold Weather Constraint, but failed to update its operating limitations as required under Requirement R8, Part 8.2 (if applicable).	The Generator Owner declared a Cold Weather Constraint, but failed to update its Corrective Action Plan following a determination by the CEA that the constraint is invalid in	The Generator Owner declared a Generator Cold Weather Constraint but failed to submit it to the CEA. OR The Generator Owner failed to implement freeze protection

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
			accordance with Requirement R8 Part 8.3 (as applicable). OR The Generator Owner failed to document and provide the required notice to the CEA under Requirement R8 Part 8.4 (if applicable).	measures to provide the necessary capability in accordance with Requirement R8 Part 8.3.
R9.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 36 but fewer than 38 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 38 but fewer than 40 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 40 but fewer than 42 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9, but this review was performed more than 42 calendar months after CEA validation or after the previous Generator Owner review. OR The Generator Owner failed to review a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				valid in accordance with Requirement R9. OR The Generator Owner failed to develop or update a Corrective Action Plan where required by Requirement R9, Part 9.1 (if applicable).

D. Regional Variances

None.

E. Associated Documents

Implementation Plan

Calculating Extreme Cold Weather Temperature

EOP-012-3 Technical Rationale

Generator Cold Weather CAP Extension and Constraint Process

Attachment 1

Generator Owners shall determine the applicability of a Generator Cold Weather Constraint declared under Requirements R2, R6, and R7 using the criteria as described below.

The definition of a Generator Cold Weather Constraint is: "Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would be expected to result in improved generating unit performance during cold temperatures."

A Generator Cold Weather Constraint can be identified using the following criteria:

Known Generator Cold Weather Constraints

The following are circumstances which, if present and confirmed as valid by the CEA, will constitute known Generator Cold Weather Constraints:

- Individual wind turbine towers manufactured prior to October 1, 2029 that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1 for generating units that began commercial operation prior to October 1, 2031.
- Application of freeze protection measures to meet the requirements of this Standard that require:
    - Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities;
    - Removal of accumulated frozen precipitation on solar panels;
    - Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters; or
    - Implementation of heat tracing or other de-icing technologies for wind turbine blades, that, through analysis, have been shown to not be effective or not made available by the OEM for generating units of a comparable types in regions that experience similar winter climate conditions.

Case-by-case Determinations of Generator Cold Weather Constraints

The following situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the CEA will these circumstances constitute a valid Generator Cold Weather Constraint:

1. The implementation of a specific freeze protection measure will void an equipment warranty.
2. The implementation of a specific freeze protection measure would exceed a manufacturer's design limitation and the exceedance is expected to functionally impair or degrade the effective operation of the impacted component or system.

3. The implementation of a specific freeze protection measure is precluded by technical or physical limitations. For example:
    a. Installing wind breaks around a cooling tower or air-cooled heat exchanger that requires free airflow for its functionality;
    b. Implementing freeze protection measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system;
    c. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.
4. A determination, through an analysis, that the freeze protection measure would not be effective for the generating unit. Such a determination may be supported, for example, by fleet or industry operating experience (or lack thereof) with the freeze protection measure on generating unit(s) of comparable types in regions that experience similar winter climate conditions.
5. A determination, through an analysis, that the implementation of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:
    a. The implementation of freeze protection measures, while feasible, would result in the accelerated premature retirement of an existing generating unit with no acceptable replacement available within the accelerated timeframe (must be accompanied by an attestation signed by an officer of the company);
    b. The implementation of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit (must be accompanied by an attestation signed by an officer of the company);
    c. The implementation of freeze protection measures would reduce the generating unit's ability to provide Real Power or Reactive Power capability by more than three percent, or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.), when freeze protection measures are not in use; or
    d. The implementation of freeze protection measures would reduce the summer net dependable capacity[1], or net dependable capacity at Peak Demand, of the generating unit by more than three percent or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.);
    e. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.

[1] "net dependable capacity" refers to the definition used for reporting to the NERC in Generating Availability Data System (GADS) appropriate for the generation type.

6. The implementation of new freeze protection measures to an existing generating unit that has previously communicated a retirement date to the appropriate functional entity (e.g., Transmission Planner (TP), Reliability Coordinator (RC), Balancing Authority (BA), etc.) that falls within three calendar years of the Generator Cold Weather Constraint declaration;
7. The implementation of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.
8. A determination through an analysis that the freeze protection measure is not available on the commercial market for generating units of comparable types in regions that experience similar winter climate conditions.
9. Implementation of freeze protection measures would not increase reliability of a generating unit due to clearly delineated technical or physical reasons on fuel supply which has been communicated to its Reliability Coordinator (RC) or Balancing Authority (BA) and are not due to Fixed Fuel Supply Components, and which are outside the Generator Owner's control.
10. Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Generator Cold Weather Critical Components.

An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

Version History

Version	Date	Action	Change Tracking
1	October 1, 2022	Drafted by Project 2021-07.	New
2	February 16, 2023	Revisions drafted by Project 2021-07 due to FERC Order and inquiry Recommendations.	Revisions
2	February 15,2024	Board Adopted.	
2	June 27, 2024	FERC Approved.	
3	April 4, 2025	Drafted by Project 2024-03, Revised by the Standards Committee under Section 321 of the NERC Rules of Procedure.	As directed by the June 2024 FERC Order

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

This is the Final posting pending Board approval.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	July 17, 2024
SAR posted for comment	July 18, 2024 – August 16, 2024
20-day formal comment period with initial ballot	October 17, 2024 – November 5, 2024
18-day formal comment period with additional ballot	December 3, 2024 – December 20, 2024
45-day comment period	January 27, 2025 – March 12, 2025

Anticipated Actions	Date
Board adoption	April 4, 2025

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures ~~include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and~~ are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would be expected to result in improved generating unit performance during cold temperatures.

Previously Approved Terms

This section includes previously approved terms from EOP-012-1 and EOP-012-2. It is included to help with drafting and the posting of EOP-012-3.

Extreme Cold Weather Temperature – The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 01/01/2000 through the date the temperature is calculated.

Generator Cold Weather Critical Component – Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

Fixed Fuel Supply Component – Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

A. Introduction

1. **Title:** Extreme Cold Weather Preparedness and Operations

2. **Number:** EOP-012-3

3. **Purpose:** To address the effects of operating in extreme cold weather by ensuring each Generator Owner has developed and implemented plan(s) to mitigate the reliability impacts of extreme cold weather on its applicable generating units.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Generator Owner

   4.1.2. Generator Operator

   4.2. Facilities:

   4.2.1. Bulk Electric System (BES) generating units. For purposes of this standard, the term "generating unit" subject to these requirements refers to the following ~~Bulk Electric System (~~BES~~)~~ resources:

   4.2.1.1. A Bulk Electric System generating resource identified in the BES definition, Inclusion I2 and I4; or

   4.2.1.2. A Blackstart Resource, identified in the BES definition, Inclusion I3.

5. **Effective Date:** See Implementation Plan for Project 2024-03.

B. Requirements and Measures

R1. At least once every five (5) calendar years, each Generator Owner shall, for each of its applicable generating unit(s): [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]

1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable generating unit(s) and identify the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, if necessary; and

1.1.1. If the recalculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation, and if new corrective actions are needed to provide the required operational capability described in Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) calendar months of the recalculation.

1.2. Identify generating unit(s) cold weather data, to include:

1.2.1. Generating unit(s) operating limitations in cold weather to include:

1.2.1.1. Capability and availability;

1.2.1.2. Fuel supply and inventory concerns;

1.2.1.3. Start-up issues;

1.2.1.4. Fuel switching capabilities; and

1.2.1.5. Environmental constraints.

1.2.2. Generating unit(s) minimum:

- Design temperature, and if available, the concurrent wind speed and precipitation;
- Historical operating temperature at least one hour in duration, and if available, the concurrent wind speed and precipitation; or
- Current cold weather performance temperature determined by an engineering analysis, which includes the concurrent wind speed and precipitation.

M1. Each Generator Owner will have evidence documenting its Extreme Cold Weather Temperature calculation, including the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, and design information, operating data, or engineering analysis that supports its generating unit minimum temperature.

R2. Applicable to generating units that begin commercial operation[1] on or after October 1, 2027[2]: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),~~[2]~~[3] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

~~**2.1** For generating units for which the Generator Owner first contractually committed to design criteria[3] relevant to this Requirement before June 29, 2023[4] and which enter commercial operation between October 1, 2027 and March 31, 2028:~~

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or

~~• Develop, implement, and complete by April 1, 2028, a Corrective Action Plan to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or~~

- Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

~~**2.2** For generating units for which the Generator Owner first contractually committed to design criteria[5] relevant to this Requirement on or after June 29, 2023[6]:~~

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[1] Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing.

[2] In non-U.S. jurisdictions, this will be the date established by the Applicable Governmental Authority.

~~[2]~~[3] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

~~[3] Such commitments would be demonstrated by signed contracts creating a binding legal agreement with respect to the design criteria for the unit.~~

~~[4] In non-U.S. jurisdictions, use the date the applicable government authority in the relevant jurisdiction approved the first version of the EOP-012 Reliability Standard and the definition of Extreme Cold Weather Temperature.~~

~~[5] Such commitments would be demonstrated by signed contracts creating a binding legal agreement with respect to the design criteria for the unit.~~

~~[6] In non-U.S. jurisdictions, use the date the applicable government authority in the relevant jurisdiction approved the first version of the EOP-012 Reliability Standard and the definition of Extreme Cold Weather Temperature.~~

- ~~Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or~~

- ~~Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.~~

M2.~~–~~ Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R2~~, or it has developed, implemented, and completed by April 1, 2028, a Corrective Action Plan~~, or it has declared a Generator Cold Weather Constraint for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature under Requirement R1 Part 1.2.2 which is equal to or less than the generating unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, ~~Corrective Action Plan(s) (if applicable),~~ and Generator Cold Weather Constraints (if applicable).

R3. Applicable to generating unit(s) in commercial operation prior to October 1, 2027:[4] Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),~~7~~[5] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature; or

- Develop a Corrective Action Plan to add new or modify existing freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature.

M3. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R3, or it has developed a Corrective Action Plan for the identified issues. Acceptable evidence may include, but is not limited to, the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature per Part 1.2.2 which is equal

[4] In non-U.S. jurisdictions, this will be the date established by the Applicable Governmental Authority.

~~7~~[5] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and Corrective Action Plan(s).

R4. Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness plan(s) shall include the following, at a minimum: *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. The lowest calculated Extreme Cold Weather Temperature for each generating unit, as determined in Requirement R1;[~~8~~6]

4.2. The generating unit cold weather data, as determined in Requirement R1, Part 1.2;

4.3. Documentation identifying Generator Cold Weather Critical Components;

4.4. Documentation of freeze protection measures implemented on Generator Cold Weather Critical Components that includes measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain); ~~and~~

4.5. Annual inspection and maintenance of generating unit(s) freeze protection measures implemented on Generator Cold Weather Critical Components.

M4. Each Generator Owner will have evidence documenting that its cold weather preparedness plan(s) was implemented and maintained in accordance with Requirement R4. Examples of documentation to demonstrate a cold weather preparedness plan may include existing operating procedures, plans, checklists, or processes. Examples of documentation, to demonstrate inspections and maintenance have been completed, may include, but are not limited to, completed work order(s) from the Generator Owner's work management system and/or freeze protection checklists identifying the measures inspected and maintained for the Generator Cold Weather Critical Components.

R5. Each Generator Owner, in conjunction with its Generator Operator, shall identify the entity responsible for providing generating unit-specific training, and that identified entity shall provide annual training to the maintenance and operations personnel, as applicable, responsible for implementing the cold weather preparedness plan(s) developed pursuant to Requirement R4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*

M5. Each Generator Operator or Generator Owner will have documented evidence that the applicable personnel completed annual training of the Generator Owner's cold weather preparedness plan(s). This evidence may include, but is not limited to, documents such as personnel training records, training materials, date of training, agendas or learning

[~~8~~6] Generator Owners shall include the lowest calculated Extreme Cold Weather Temperature for the unit, even where subsequent periodic re-calculations under Requirement R1 Part 1.1 cause an increase in the Extreme Cold Weather Temperature.

objectives, attendance at pre-work briefings, review of work order tasks, tailboards, attendance logs for classroom training, and completion records for computer-based training in fulfillment of Requirement R5.

R6. Each Generator Owner shall, after experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[~~9~~7] develop and implement[~~10~~8] a Corrective Action Plan(s) to address identified freezing issues as follows: *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

6.1. The Generator Owner shall develop a Corrective Action Plan for the generating unit that experienced a Generator Cold Weather Reliability Event no later than prior to the first day of the first December following the Generator Cold Weather Reliability Event.[~~11~~9]

6.2. The Generator Owner shall conduct a review of other generating unit(s) in its fleet with the same or similar equipment as the affected generating unit to determine if any of those generating unit(s) are susceptible to the identified freezing issues. If corrective actions are needed, the Generator Owner shall develop or update a Corrective Action Plan to address the other generating unit(s). This review and, if applicable, the development or update of any Corrective Action Plan(s), shall be completed no later than 12 calendar months following the Generator Cold Weather Reliability Event.

6.3. For each Corrective Action Plan, the Generator Owner shall include at a minimum:

6.3.1. A summary of the identified cause(s) of the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;

6.3.2. A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures;

6.3.3. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed;

[~~9~~7] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[~~10~~8] If a Generator Owner has previously experienced a Generator Cold Weather Reliability Event and developed a Corrective Action Plan for the generating unit or units under Requirement R6 Parts 6.1 or 6.2, the Generator Owner may review and update its existing plan(s) in lieu of developing a new plan.

[~~11~~9] For events that occur ~~early in the season, such as in~~in September, October, or November, the timetable shall specify completion prior to December 1 of the ~~next~~following calendar year.

6.3.4. A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required; and

6.3.5. A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows:

6.3.5.1. For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.[~~12~~10]

6.3.5.2. For other generating unit(s) owned by the Generator Owner, within 24 calendar months of completing the review required in Part 6.2, or no later than 36 calendar months following the Generator Cold Weather Reliability Event.

6.4 If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval. The submitted Corrective Action Plan extension request shall include the following:

6.4.1. An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner;

6.4.2. Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and

6.4.3. Updated timetable for implementing the selected actions in Part 6.3.2.

6.5 The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, as applicable.

M6. Each Generator Owner will have dated evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event for applicable unit(s) in accordance with Requirement R6. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraint(s).

[~~12~~10] For events that occur ~~early in the season, such as in~~in September, October or November, the timetable shall specify completion prior to December 1 of the ~~next~~following calendar year.

R7. Each Generator Owner that is required to develop a Corrective Action Plan under Requirements R1, R3, or R9 shall develop and implement the Corrective Action Plan in accordance with the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

7.1. For each Corrective Action Plan, the Generator Owner shall include at a minimum the following:

7.1.1. A list of any actions that require new freeze protection measures, with a timetable specifying completion of such measures within 48 calendar months of completing development of the Corrective Action Plan;

7.1.2. A list of any actions that remedy issues with existing freeze protection measures with a timetable specifying completion of such measures within 24 calendar months of completing development of the Corrective Action Plan (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures);

7.1.3. A description of updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; and

7.1.4. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed.

7.2. If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R7 Part 7.1 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following:

7.2.1. An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.2.2. Revisions to the selected actions in Parts 7.1, if any, including utilization of operating procedures, if applicable; and

7.2.3. Updated timetable for implementing the selected actions in Part 7.1.

7.3. The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8.

M7. Each Generator Owner shall have dated evidence that it developed and implemented a Corrective Action Plan for applicable unit(s) in accordance with Requirement R7. Acceptable evidence may include, but is not limited to, the following dated

documentation (electronic or hardcopy format): Corrective Action Plan(s), completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraints.

R8. Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

8.1. Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows:

- For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or
- For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable.

8.2. Update the operating limitations under Requirement R1 Part R1.2 if applicable;

8.3. If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2; ~~and~~

8.4. Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event~~, the cause of Generator Cold Weather Reliability Event is~~ with the same ~~as that~~cause of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause ~~of the more recent Generator Cold Weather Reliability Event are~~is addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit.

M8. Each Generator Owner shall have dated evidence that demonstrates it performed the actions in accordance with Requirement R8. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): a copy of the Generator Cold Weather Constraint declaration, evidence the declaration was provided to the ~~Compliance Enforcement Authority~~CEA in accordance with the specified timeframe, records that document update(s) to the operating limitations, as needed, updates to the Corrective Action Plan(s), if applicable, and documentation and notice to the CEA of subsequent Generator Cold Weather Reliability Events, if applicable.

R9. The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

9.1 If a Generator Cold Weather Constraint is determined to be no longer valid, then within six (6) calendar months of such determination, the Generator Owner shall develop or update a Corrective Action Plan pursuant to Requirement R7.

M9. Each Generator Owner shall have dated evidence that demonstrates it reviewed Generator Cold Weather Constraints in accordance with Requirement R9. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the performance of the review within the required timeframe, records that demonstrate that a Corrective Action Plan was developed or updated within the required timeframe (if applicable).

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" (CEA) means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation.

- The Generator Owner shall retain data or evidence to support its current Extreme Cold Weather Temperature calculation and generating unit cold weather data, plus each calculation or revision since the last audit, for Requirement R1 and Measure M1.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R2 or R3 is complete, whichever timeframe is greater, for Requirements R2 and R3 and Measures M2 and M3. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall retain the current cold weather preparedness plan(s), as evidence of review or revision history, plus each version issued since the last audit and evidence of compliance since the last audit for Requirement R4 and Measure M4.
- The Generator Owner or Generator Operator shall keep data or evidence to show compliance for three years for Requirement R5 and Measure M5.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extensions (if applicable), under Requirement R6 is complete, whichever timeframe is greater, for Requirement R6 and Measure M6. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extension (if applicable), under Requirement R7 is complete, whichever timeframe is

greater, for Requirement R7 and Measure M7. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.

- The Generator Owner shall maintain data or evidence to support its current Generator Cold Weather Constraint declaration(s), plus each revision since the last audit, for Requirement R8 and Measure M8.
- The Generator Owner shall maintain data or evidence to support that it reviewed each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months since the last audit, for Requirement R9 and Measure M9.

1.3. Compliance Monitoring and Enforcement Program: "Compliance Monitoring Enforcement Program" or "CMEP" means, depending on the context (1) the NERC Compliance Monitoring and Enforcement Program (Appendix 4C to the NERC Rules of Procedure) or the Commission-approved program of a Regional Entity, as applicable, or (2) the program, department or organization within NERC or a Regional Entity that is responsible for performing compliance monitoring and enforcement activities with respect to Registered Entities' compliance with Reliability Standards.

1.4. Compliance Abeyance Period: From the effective date of Reliability Standard EOP-012-3 until October 1, 2027, the ~~Compliance Enforcement Authority~~CEA will not pursue an action under Sections 4A.0 or 5.0 of Appendix 4C to the Rules of Procedure for a failure to comply with Reliability Standard EOP-012-3 Requirement R1 Part 1.1 with respect to the calculation of the Extreme Cold Weather Temperature for an applicable generating unit, or any other failure to comply resulting from an incorrect calculation of the Extreme Cold Weather Temperature for that generating unit, against any entity acting in good faith to comply with the standard in accordance with the relevant implementation plan. "Good faith" in this context refers to a sincere intention to comply with Reliability Standard EOP-012-3~~,~~ regarding all requirements based on the calculation of the Extreme Cold Weather Temperature for each applicable generating unit, following a reasonable and serious assessment by the entity in determining how this Reliability Standard should be applied to its particular facts and circumstances. Entities shall participate in any compliance monitoring activities undertaken by the ~~Compliance Enforcement Authority~~CEA during this abeyance period and submit documentation as requested.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.
R2.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not ~~complete a Corrective Action Plan or~~ declare a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not ~~complete a Corrective Action Plan or~~ ~~-~~declare a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not ~~complete a Corrective Action Plan or~~ declare a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not ~~complete a Corrective Action Plan or~~ declare a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R3.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for 5% or less of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 20% of its applicable units.
R4.	The Generator Owner implemented a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable parts within Requirement R4.	The Generator Owner maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.
R5.	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • one applicable personnel for a single generating unit; or • 5% or less of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • two applicable personnel for a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • three applicable personnel for a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • four or more applicable personnel for a single generating unit; or • more than 15% of its total applicable personnel.
R6.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 12 but fewer than 15 calendar months after the Generator Cold Weather Reliability Event.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 15 but fewer than 18 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirement R6, but it failed to contain one	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 18 but fewer than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirements R6, but it failed to contain two	The Generator Owner failed to develop a Corrective Action Plan where required under Requirement R6. OR The Generator Owner developed a Corrective Action Plan where required under Requirement R6, but failed to implement it. OR The Generator Owner failed to conduct a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		of the elements in Requirement R6, Part 6.3.	of the elements in Requirement R6, Part 6.3. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable), but it did not include one of the required elements.	Requirement R6, Part 6.2, or the Generator Owner conducted the review, but it was conducted more than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan, but failed to contain three or more of the elements in Requirement R6, Part 6.3. OR The Generator Owner exceeded the timetables specified for completion in Requirement R6, Part 6.3.5, but did not submit a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable). OR The Generator Owner submitted a Corrective Action Plan extension request in

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				accordance with Part 6.4 (if applicable), but it did not include two or more of the elements in Requirement R6, Part 6.4. OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s), in accordance with Requirement R6, Part 6.5.
R7.	N/A	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include a description of updates to the cold weather preparedness plan and identification of operating limits as required in Requirement R7, Parts 7.1.3 and 7.1.4.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include one of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include two or more of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
			accordance with Requirement R7, Part 7.2 (if applicable), but it did not include one of the required elements.	accordance with Requirement R7, Part 7.2 (if applicable), but it did not include two or more of the required elements. OR The Generator Owner failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable). OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) in accordance with Requirement R7 Part 7.3.
R8.	The Generator Owner declared a Generator Cold Weather Constraint and submitted it to the ~~Compliance Enforcement Authority~~CEA but it did not do so within the timeframe	The Generator Owner declared a Generator Cold Weather Constraint, but failed to update its operating limitations as	The Generator Owner declared a Cold Weather Constraint, but failed to update its Corrective Action Plan following a determination by the ~~Compliance Enforcement~~	The Generator Owner declared a Generator Cold Weather Constraint but failed to submit it to the ~~Compliance Enforcement Authority~~CEA.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	provided in Requirement R8 Part 8.1.	required under Requirement R8, Part 8.2 (if applicable).	~~Authority~~CEA that the constraint is invalid in accordance with Requirement R8 Part 8.3 (as applicable). OR The Generator Owner failed to document and provide the required notice to the CEA under Requirement R8 Part 8.4 (if applicable).	OR The Generator Owner failed to implement freeze protection measures to provide the necessary capability in accordance with Requirement R8 Part 8.3.
R9.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the ~~Compliance Enforcement Authority~~CEA to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 36 but fewer than 38 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the ~~Compliance Enforcement Authority~~CEA to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 38 but fewer than 40 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the ~~Compliance Enforcement Authority~~CEA to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 40 but fewer than 42 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the ~~Compliance Enforcement Authority~~CEA to determine if it remains valid in accordance with Requirement R9, but this review was performed more than 42 calendar months after CEA validation or after the previous Generator Owner review. OR The Generator Owner failed to review a Generator Cold Weather Constraint declaration validated by the

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				~~Compliance Enforcement Authority~~CEA to determine if it remains valid in accordance with Requirement R9. OR The Generator Owner failed to develop or update a Corrective Action Plan where required by Requirement R9, Part 9.1 (if applicable).

D. Regional Variances

None.

E. Associated Documents

Implementation Plan

Calculating Extreme Cold Weather Temperature

EOP-012-3 Technical Rationale

Generator Cold Weather CAP Extension and Constraint Process

Attachment 1

Generator Owners shall determine the applicability of a Generator Cold Weather Constraint declared under Requirements R2, R6, and R7 using the criteria as described below.

The definition of a Generator Cold Weather Constraint is: "Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures ~~include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and~~ are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would be expected to result in improved generating unit performance during cold temperatures."

A Generator Cold Weather Constraint can be identified using the following criteria:

Known Generator Cold Weather Constraints

The following are circumstances which, if present and confirmed as valid by the CEA, will constitute known Generator Cold Weather Constraints:

- Individual wind turbine towers manufactured prior to October 1, 2029 that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1 for generating units that began commercial operation prior to October 1, 2031.
- Application of freeze protection measures to meet the requirements of this Standard that require:
    - Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities;
    - Removal of accumulated frozen precipitation on solar panels;
    - Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters; or
    - Implementation of heat tracing or other de-icing technologies for wind turbine blades, that, through analysis, have been shown to not be effective or not made available by the OEM for generating units of a comparable types in regions that experience similar winter climate conditions.

Case-by-case Determinations of Generator Cold Weather Constraints

The following situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the CEA will these circumstances constitute a valid Generator Cold Weather Constraint:

1. The implementation of a specific freeze protection measure will void an equipment warranty.

2. The implementation of a specific freeze protection measure would exceed a manufacturer's design limitation and the exceedance is expected to functionally impair or degrade the effective operation of the impacted component or system.
3. The implementation of a specific freeze protection measure is precluded by technical or physical limitations. For example:
    a. Installing wind breaks around a cooling tower or air-cooled heat exchanger that requires free airflow for its functionality;
    b. Implementing freeze protection measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system;
    c. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.
4. A determination, through an analysis, that the freeze protection measure would not be effective for the generating unit. Such a determination may be supported, for example, by fleet or industry operating experience (or lack thereof) with the freeze protection measure on generating unit(s) of comparable types in regions that experience similar winter climate conditions.
5. A determination, through an analysis, that the implementation of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:
    a. The implementation of freeze protection measures, while feasible, would result in the accelerated premature retirement of an existing generating unit with no acceptable replacement available within the accelerated timeframe (must be accompanied by an attestation signed by an officer of the company);
    b. The implementation of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit (must be accompanied by an attestation signed by an officer of the company);
    c. The implementation of freeze protection measures would reduce the generating unit's ability to provide Real Power or Reactive Power capability by more than three percent, or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.), when freeze protection measures are not in use; or
    d. The implementation of freeze protection measures would reduce the summer net dependable capacity[~~1~~1], or net dependable capacity at Peak Demand, of the generating unit by more than three percent or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.);

[~~1~~1] "net dependable capacity" refers to the definition used for reporting to the NERC in Generating Availability Data System (GADS) appropriate for the generation type.

e. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.

6. The implementation of new freeze protection measures to an existing generating unit that has previously communicated a retirement date to the appropriate functional entity (e.g., Transmission Planner (TP), Reliability Coordinator (RC), Balancing Authority (BA), etc.) that falls within three calendar years of the Generator Cold Weather Constraint declaration;
7. The implementation of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.
8. A determination through an analysis that the freeze protection measure is not available on the commercial market for generating units of comparable types in regions that experience similar winter climate conditions.
9. Implementation of freeze protection measures would not increase reliability of a generating unit due to clearly delineated technical or physical reasons on fuel supply which has been communicated to its Reliability Coordinator (RC) or Balancing Authority (BA) and are not due to Fixed Fuel Supply Components, and which are outside the Generator Owner's control.
10. Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Generator Cold Weather Critical Components.

An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

Version History

Version	Date	Action	Change Tracking
1	October 1, 2022	Drafted by Project 2021-07.	New
2	February 16, 2023	Revisions drafted by Project 2021-07 due to FERC Order and inquiry Recommendations.	Revisions
2	February 15,2024	Board Adopted.	
2	June 27, 2024	FERC Approved.	
3	April 4, 2025	Drafted by Project 2024-03, Revised by the Standards Committee under Section 321 of the NERC Rules of Procedure.	As directed by the June 2024 FERC Order

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

This is the Final posting pending Board approval.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	July 17, 2024
SAR posted for comment	July 18, 2024 – August 16, 2024
20-day formal comment period with initial ballot	October 17, 2024 – November 5, 2024
18-day formal comment period with additional ballot	December 3, 2024 – December 20, 2024
45-day comment period	January 27, 2025 – March 12, 2025

Anticipated Actions	Date
Board adoption	April 4, 2025

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

Generator Cold Weather Constraint – Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. ~~. using the criteria below.~~ Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include ~~acceptable~~ practices, methods, or technologies ~~generally implemented by the electric industry in areas that experience similar winter climate conditions.~~ that would be expected to result in improved generating unit performance during cold temperatures.

~~Criteria used to determine a constraint include practices, methods, or technologies which, given the exercise of reasonable judgment in light of the facts known at the time the decision to declare the constraint was made:~~

~~Were not broadly implemented at generating units for comparable unit types in regions that experience similar winter climate conditions to provide reasonable assurance of efficacy;~~

~~Could not have been expected to accomplish the desired result; or~~

~~Could not have been implemented at a reasonable cost consistent with good business practices, reliability, or safety. A cost may be deemed "unreasonable" when implementation of selected freeze protection measure(s) are uneconomical to the extent that they would require prohibitively expensive modifications or significant expenditures on equipment with minimal remaining life.~~

Previously Approved Terms

This section includes previously approved terms from EOP-012-1 and EOP-012-2. It is included to help with drafting and the posting of EOP-012-3.

Extreme Cold Weather Temperature – The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 01/01/2000 through the date the temperature is calculated.

Generator Cold Weather Critical Component – Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed

Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

Fixed Fuel Supply Component – Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

Generator Cold Weather Reliability Event – One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit, but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

A. Introduction

1. **Title:** Extreme Cold Weather Preparedness and Operations

2. **Number:** EOP-~~012-2~~012-3

3. **Purpose:** To address the effects of operating in extreme cold weather by ensuring each Generator Owner has developed and implemented plan(s) to mitigate the reliability impacts of extreme cold weather on its applicable generating units.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Generator Owner

   4.1.2. Generator Operator

   4.2. Facilities:

   4.2.1. Bulk Electric System (BES) generating units. For purposes of this standard, the term "generating unit" subject to these requirements refers to the following ~~Bulk Electric System (~~BES~~)~~ resources:

   4.2.1.1. A Bulk Electric System generating resource identified in the BES definition, ~~inclusion~~Inclusion I2 and I4; or

   4.2.1.2. A Blackstart Resource, identified in the BES definition, ~~inclusion~~Inclusion I3.

5. **Effective Date:** See Implementation Plan for Project ~~2021-07 Phase 2~~2024-03.

B. Requirements and Measures

R1. At least once every five (5) calendar years, each Generator Owner shall, for each of its applicable generating unit(s): [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]

1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable generating unit(s) and identify the calculation date ~~and~~, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, if necessary; and

1.1.1. If the ~~re-calculated~~recalculated Extreme Cold Weather Temperature is lower than the previous Extreme Cold Weather Temperature, the entity shall review and update its cold weather preparedness plan(s) under Requirement R4 within six (6) calendar months of the recalculation. ~~If~~, and if new corrective actions are needed to provide the required operational capability ~~under~~described in Requirement R2 or R3, the entity shall develop a Corrective Action Plan within six (6) calendar months of the recalculation.

1.2. Identify generating unit(s) cold weather data, to include:

1.2.1. Generating unit(s) operating limitations in cold weather to include:

1.2.1.1. Capability and availability;

1.2.1.2. Fuel supply and inventory concerns;

1.2.1.3. Start-up issues;

1.2.1.4. Fuel switching capabilities; and

1.2.1.5. Environmental constraints.

1.2.2. Generating unit(s) minimum:

- Design temperature, and if available, the concurrent wind speed and precipitation;
- Historical operating temperature at least one hour in duration, and if available, the concurrent wind speed and precipitation; or
- Current cold weather performance temperature determined by an engineering analysis, which includes the concurrent wind speed and precipitation.

M1. Each Generator Owner will have evidence documenting its Extreme Cold Weather Temperature calculation, including the calculation date, source(s) of temperature data, and adjustments utilized for missing or invalid hourly temperature data, and design information, operating data, or engineering analysis that supports its generating unit minimum temperature.

R2. Applicable to generating units ~~with a~~that begin commercial operation ~~date~~ [1] on or after October 1, 2027[2]: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),~~1~~[3] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or
- ~~Develop a Corrective Action Plan(s) to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours.~~
- Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8.

M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R2, or it has ~~developed a Corrective Action Plan~~declared a Generator Cold Weather Constraint for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature under Requirement R1 Part 1.2.2 which is equal to or less than the generating unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and ~~Corrective Action Plan(s~~Generator Cold Weather Constraints (if applicable).

R3. Applicable to generating unit(s) in commercial operation prior to October 1, 2027:[4] Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a

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[1] Commercial operation means achievement of this designation indicating that the facility has received all approvals necessary for operation after completion of initial start-up testing.

[2] In non-U.S. jurisdictions, this will be the date established by the Applicable Governmental Authority.

~~1~~[3] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[4] In non-U.S. jurisdictions, this will be the date established by the Applicable Governmental Authority.

temperature of 32 degrees Fahrenheit (zero degrees Celsius),[~~2~~5] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

- Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature; or
- Develop a Corrective Action Plan to add new or modify existing freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature.

M3. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R3, or it has developed a Corrective Action Plan for the identified issues. Acceptable evidence may include, but is not limited to, the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature per Part 1.2.2 which is equal to or less than the unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, and Corrective Action Plan(s).

R4. Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness plan(s) shall include the following, at a minimum: *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. The lowest calculated Extreme Cold Weather Temperature for each generating unit, as determined in Requirement R1;[~~3~~6]

4.2. The generating unit cold weather data, as determined in Requirement ~~R1.2~~R1, Part 1.2;

4.3. Documentation identifying Generator Cold Weather Critical Components;

4.4. Documentation of freeze protection measures implemented on Generator Cold Weather Critical Components ~~which~~that includes measures used to reduce the cooling effects of wind determined necessary by the Generator Owner to protect against heat loss, and where applicable, the effects of freezing precipitation (e.g., sleet, snow, ice, and freezing rain); ~~and~~

4.5. Annual inspection and maintenance of generating unit(s) freeze protection measures implemented on Generator Cold Weather Critical Components.

M4. Each Generator Owner will have evidence documenting that its cold weather preparedness plan(s) was implemented and maintained in accordance with

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[~~2~~5] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[~~3~~6] Generator Owners shall include the lowest calculated Extreme Cold Weather Temperature for the unit, even where subsequent periodic re-calculations under Requirement R1 Part 1.1 cause an increase in the Extreme Cold Weather Temperature.

Requirement R4. Examples of documentation to demonstrate a cold weather preparedness plan may include existing operating procedures, plans, checklists, or processes. Examples of documentation, to demonstrate inspections and maintenance have been completed, may include, but are not limited to, completed work order(s) from the Generator Owner's work management system and/or freeze protection checklists identifying the measures inspected and maintained for the Generator Cold Weather Critical Components.

R5. Each Generator Owner, in conjunction with its Generator Operator, shall identify the entity responsible for providing ~~the~~ generating unit-specific training, and that identified entity shall provide annual training to ~~its~~the maintenance ~~or~~and operations personnel, as applicable, responsible for implementing the cold weather preparedness plan(s) developed pursuant to Requirement R4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*

M5. Each Generator Operator or Generator Owner will have documented evidence that the applicable personnel completed annual training of the Generator Owner's cold weather preparedness plan(s). This evidence may include, but is not limited to, documents such as personnel training records, training materials, date of training, agendas or learning objectives, attendance at pre-work briefings, review of work order tasks, tailboards, attendance logs for classroom training, and completion records for computer-based training in fulfillment of Requirement R5.

R6. Each Generator Owner shall, ~~for each~~after experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[4][7] develop and implement[8] a Corrective Action Plan ~~when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed within 150 days or by July 1, whichever is earlier, and contain at a minimum~~(s) to address identified freezing issues as follows: *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

6.1. The Generator Owner shall develop a Corrective Action Plan for the generating unit that experienced a Generator Cold Weather Reliability Event no later than prior to the first day of the first December following the Generator Cold Weather Reliability Event.[9]

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[4][7] Generating unit(s) that do not self-commit or are not required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), but may be called upon to operate in order to assist in the mitigation of BES Emergencies, Capacity Emergencies, or Energy Emergencies during periods at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), are exempt from this requirement.

[8] If a Generator Owner has previously experienced a Generator Cold Weather Reliability Event and developed a Corrective Action Plan for the generating unit or units under Requirement R6 Parts 6.1 or 6.2, the Generator Owner may review and update its existing plan(s) in lieu of developing a new plan.

[9] For events that occur in September, October, or November, the timetable shall specify completion prior to December 1 of the following calendar year.

6.2. The Generator Owner shall conduct a review of other generating unit(s) in its fleet with the same or similar equipment as the affected generating unit to determine if any of those generating unit(s) are susceptible to the identified freezing issues. If corrective actions are needed, the Generator Owner shall develop or update a Corrective Action Plan to address the other generating unit(s). This review and, if applicable, the development or update of any Corrective Action Plan(s), shall be completed no later than 12 calendar months following the Generator Cold Weather Reliability Event.

6.3. For each Corrective Action Plan, the Generator Owner shall include at a minimum:

~~**6.1**~~**6.3.1.** A summary of the identified cause(s) ~~for~~of the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;

~~**6.2.** A review of applicability to similar equipment at generating units owned by the Generator Owner; and~~

6.3.2. A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures;

~~**6.3**~~**6.3.3.** An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until ~~execution~~implementation of the corrective action(s) identified in the Corrective Action Plan~~.~~ is completed;

6.3.4. A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required; and

6.3.5. A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows:

6.3.5.1. For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.[10]

6.3.5.2. For other generating unit(s) owned by the Generator Owner, within 24 calendar months of completing the review required in Part 6.2, or no later than 36 calendar months following the Generator Cold Weather Reliability Event.

6.4 If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance

[10] For events that occur in September, October or November, the timetable shall specify completion prior to December 1 of the following calendar year.

Enforcement Authority (CEA) for approval. The submitted Corrective Action Plan extension request shall include the following:

6.4.1. An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner;

6.4.2. Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and

6.4.3. Updated timetable for implementing the selected actions in Part 6.3.2.

6.5 The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, as applicable.

M6. Each Generator Owner will have ~~documented~~dated evidence that it developed and implemented a Corrective Action Plan following a Cold Weather Reliability Event ~~at an~~for applicable unit(s) in accordance with Requirement R6. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): Corrective Action Plan(s) ~~and~~, completed work orders, copies of any Corrective Action Plan extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraint(s).

R7. Each Generator Owner~~, for each~~ that is required to develop a Corrective Action Plan ~~developed pursuant to~~under Requirements R1~~, R2~~, R3, or ~~R6, shall~~R9 shall develop and implement the Corrective Action Plan in accordance with the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

7.1. ~~Include a timetable for implementing the selected corrective action(s) that shall~~For each Corrective Action Plan, the Generator Owner shall include at a minimum the following:

7.1.1. ~~List the action(s) which address(es) existing equipment or~~A list of any actions that require new freeze protection measures, ~~if any, to be completed~~with a timetable specifying completion of such measures within ~~24~~48 calendar months of completing development of the Corrective Action Plan;

~~**7.1.2.** List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar months of completing development of the Corrective Action Plan; and~~

7.1.2. A list of any actions that remedy issues with existing freeze protection measures with a timetable specifying completion of such measures within 24 calendar months of completing development of the Corrective Action Plan (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures);

7.1.3. ~~List the~~A description of updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; and

~~**7.2.** Implement the Corrective Action Plan in accordance with the specified timetables in Requirement R7 Part 7.1;~~

~~**7.3.** Update the Corrective Action Plan action(s) and timetable(s), with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and~~

7.1.4. An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed.

7.2. If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R7 Part 7.1 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following:

7.2.1. An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

7.2.2. Revisions to the selected actions in Parts 7.1, if any, including utilization of operating procedures, if applicable; and

7.2.3. Updated timetable for implementing the selected actions in Part 7.1.

~~**7.4.** Document~~**7.3.** The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint ~~that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan~~in accordance with Requirement R8.

M7. Each Generator Owner shall have dated evidence that ~~demonstrates it~~it developed and implemented ~~each~~a Corrective Action Plan~~, including updating actions or timetables, or has explained in a declaration why corrective actions are not being implemented~~ for applicable unit(s) in accordance with Requirement ~~R8~~R7. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): ~~records that document the implementation of each~~ Corrective Action Plan~~ and the completion of actions for each~~(s), completed work orders, copies of any Corrective Action Plan ~~including revision history of each Corrective Action Plan and, if applicable, justification to support any changes to corrective action(s) identified in the Corrective Action Plan or timetables exceeding the timelines in Requirement R7 Part 7.1. For each Corrective Action Plan applying to multiple generating units, the timetable shall reflect implementation at each unit addressed in the Corrective Action~~

~~Plan. Evidence may also include work management program records, work orders, and maintenance records. Any declaration shall contain dated documentation to support constraints identified by the Generator Owner.~~extension requests and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan, and, where applicable, declared Generator Cold Weather Constraints.

R8. Each Generator Owner that ~~creates~~declares a Generator Cold Weather Constraint ~~declaration~~in accordance with Attachment 1 shall: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

8.1. ~~Review the~~Submit its Generator Cold Weather Constraint declaration ~~at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and~~ (s) to the CEA as follows:

- For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or
- For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable.

8.2. Update the operating limitations ~~associated with capability and availability~~ under Requirement R1 Part R1.2 if applicable~~.~~;

8.3. If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2;

8.4. Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event with the same cause of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause is addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit.

M8. Each Generator Owner shall have dated evidence that demonstrates it performed the ~~review and updated operating limitations as needed~~actions in accordance with Requirement R8. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): a copy of the Generator Cold Weather Constraint declaration, evidence the declaration was provided to the CEA in accordance with the specified timeframe, records that document ~~the performance of the review and~~ update(s) to the operating limitations, as needed, updates to the Corrective Action Plan(s), if applicable, and documentation and notice to the CEA of subsequent Generator Cold Weather Reliability Events, if applicable.

R9. The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

9.1 If a Generator Cold Weather Constraint is determined to be no longer valid, then within six (6) calendar months of such determination, the Generator Owner shall develop or update a Corrective Action Plan pursuant to Requirement R7.

M9. Each Generator Owner shall have dated evidence that demonstrates it reviewed Generator Cold Weather Constraints in accordance with Requirement R9. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the performance of the review within the required timeframe, records that demonstrate that a Corrective Action Plan was developed or updated within the required timeframe (if applicable).

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" (CEA) means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation.

- The Generator Owner shall retain data or evidence to support its current Extreme Cold Weather Temperature calculation and generating unit cold weather data, plus each calculation or revision since the last audit, for Requirement R1 and Measure M1.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R2 or R3 is complete, whichever timeframe is greater, for Requirements R2 and R3 and Measures M2 and M3. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall retain the current cold weather preparedness plan(s), as evidence of review or revision history, plus each version issued since the last audit and evidence of compliance since the last audit for Requirement R4 and Measure M4.
- The Generator Owner or Generator Operator shall keep data or evidence to show compliance for three years for Requirement R5 and Measure M5.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extensions (if applicable), under Requirement R6 is complete, whichever timeframe is greater, for Requirement R6 and Measure M6. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan, including extension (if applicable), under Requirement R7 is complete, whichever ~~time~~

~~frame~~timeframe is greater, for Requirement R7 and Measure M7. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.

- The Generator Owner shall maintain data or evidence to support its current Generator Cold Weather Constraint declaration(s), plus each revision since the last audit, for Requirement R8 and Measure M8.
- The Generator Owner shall maintain data or evidence to support that it reviewed each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months since the last audit, for Requirement R9 and Measure M9.

1.3. Compliance Monitoring and Enforcement Program: ~~As defined in~~"Compliance Monitoring Enforcement Program" or "CMEP" means, depending on the context (1) the NERC ~~Rules of Procedure, "~~Compliance Monitoring and Enforcement Program~~" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated~~ (Appendix 4C to the NERC Rules of Procedure) or the Commission-approved program of a Regional Entity, as applicable, or (2) the program, department or organization within NERC or a Regional Entity that is responsible for performing compliance monitoring and enforcement activities with respect to Registered Entities' compliance with Reliability ~~Standard~~Standards.

1.4. Compliance Abeyance Period: From the effective date of Reliability Standard EOP-012-3 until October 1, 2027, the CEA will not pursue an action under Sections 4A.0 or 5.0 of Appendix 4C to the Rules of Procedure for a failure to comply with Reliability Standard EOP-012-3 Requirement R1 Part 1.1 with respect to the calculation of the Extreme Cold Weather Temperature for an applicable generating unit, or any other failure to comply resulting from an incorrect calculation of the Extreme Cold Weather Temperature for that generating unit, against any entity acting in good faith to comply with the standard in accordance with the relevant implementation plan. "Good faith" in this context refers to a sincere intention to comply with Reliability Standard EOP-012-3 regarding all requirements based on the calculation of the Extreme Cold Weather Temperature for each applicable generating unit, following a reasonable and serious assessment by the entity in determining how this Reliability Standard should be applied to its particular facts and circumstances. Entities shall participate in any compliance monitoring activities undertaken by the CEA during this abeyance period and submit documentation as requested.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature ~~and~~or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.
R2.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not ~~develop a Corrective Action Plan~~declare a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not ~~develop a Corrective Action Plan~~declare a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not ~~develop a Corrective Action Plan~~declare a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not ~~develop a Corrective Action Plan~~declare a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R3.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for 5% or less of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R3 for more than 20% of its applicable units. OR The Generator Owner did not develop a Corrective Action Plan as required by Requirement R3 for more than 20% of its applicable units.
R4.	The Generator Owner implemented a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable ~~Parts~~parts within Requirement R4.	The Generator Owner ~~had and~~ maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.
R5.	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to	The Generator Owner or Generator Operator failed to

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • one applicable personnel ~~at~~for a single generating unit; or • 5% or less of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • two applicable personnel ~~at~~for a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • three applicable personnel ~~at~~for a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	provide annual generating unit-specific training as described in Requirement R5 to the greater of: • four or more applicable personnel ~~at~~for a single generating unit; or • more than 15% of its total applicable personnel.
R6.	The Generator Owner ~~developed a Corrective Action Plan, but not within 150 days or by July 1 as required in Requirement R6~~conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 12 but fewer than 15 calendar months after the Generator Cold Weather Reliability Event.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 15 but fewer than 18 calendar months after the Generator Cold Weather Reliability Event. OR The Generator ~~Owner's~~Owner developed and implemented a Corrective Action Plan where required under Requirement R6, but it failed to ~~comply~~	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 18 but fewer than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator ~~Owner's~~Owner developed and implemented a Corrective Action Plan where required under Requirements R6, but it failed to ~~comply~~	The Generator Owner failed to develop a Corrective Action Plan where required under Requirement R6. OR The Generator Owner developed a Corrective Action Plan where required under Requirement R6, but failed to implement it. OR The Generator Owner failed to conduct a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		~~with~~contain one of the elements in Requirement R6, ~~Parts 6.1 through~~Part 6.3.	~~with~~contain two of the elements in Requirement R6, ~~Parts 6.1 through~~Part 6.3. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable), but it did not include one of the required elements.	Requirement R6, Part 6.2, or the Generator Owner conducted the review, but it was conducted more than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator ~~Owner's~~Owner developed and implemented a Corrective Action Plan, but failed to ~~comply with~~contain three or more of the elements in Requirement R6, ~~Parts 6.1 through~~Part 6.3. OR The Generator Owner exceeded the timetables specified for completion in Requirement R6, Part 6.3.5, but did not ~~develop~~submit a Corrective Action Plan~~, as required by~~ extension request in accordance with Requirement R6~~.~~, Part 6.4 (if applicable). OR

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.4 (if applicable), but it did not include two or more of the elements in Requirement R6, Part 6.4. OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s), in accordance with Requirement R6, Part 6.5.
R7.	~~The Generator Owner implemented a Corrective Action Plan, but failed to update the Corrective Action Plan when corrective action(s) changed in accordance with Requirement R7.~~N/A	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include a ~~timetable for implementing the selected corrective actions meeting the criteria of~~description of updates to the cold weather preparedness	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to ~~implement the~~ include one of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include two or more of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		plan and identification of operating limits as required in Requirement R7 ~~Part 7.1~~, Parts 7.1.3 and 7.1.4.	The Generator Owner submitted a Corrective Action Plan ~~within the specified timetable or failed to update the Corrective Action Plan, with justification, when timetable(s) exceeded the timelines in Requirement R7 Part 7.1.~~ extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include one of the required elements.	The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include two or more of the required elements. OR The Generator Owner failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable). OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan ~~or failed to~~, and did not document in a declaration ~~why corrective actions are not being implemented~~any Generator Cold Weather Constraint(s) in accordance with Requirement R7 Part 7.3.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R8.	~~N/A~~The Generator Owner declared a Generator Cold Weather Constraint and submitted it to the CEA but it did not do so within the timeframe provided in Requirement R8 Part 8.1.	~~N/A~~The Generator Owner declared a Generator Cold Weather Constraint, but failed to update its operating limitations as required under Requirement R8, Part 8.2 (if applicable).	The Generator Owner ~~failed to comply with one of the elements in~~declared a Cold Weather Constraint, but failed to update its Corrective Action Plan following a determination by the CEA that the constraint is invalid in accordance with Requirement R8~~, Parts 8.1 through 8.2~~. Part 8.3 (as applicable). OR The Generator Owner failed to document and provide the required notice to the CEA under Requirement R8 Part 8.4 (if applicable).	The Generator Owner declared a Generator Cold Weather Constraint but failed to submit it to the CEA. OR The Generator Owner failed to ~~comply with all of the elements in~~implement freeze protection measures to provide the necessary capability in accordance with Requirement R8~~, Parts 8.1 through 8.2~~. Part 8.3.
R9.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 36 but fewer than 38 calendar months after CEA	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 38 but fewer than 40 calendar months after CEA	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 40 but fewer than 42 calendar months after CEA	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9, but this review was performed more than 42 calendar months after CEA validation or after the

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	validation or after the previous Generator Owner review.	validation or after the previous Generator Owner review.	validation or after the previous Generator Owner review.	previous Generator Owner review. OR The Generator Owner failed to review a Generator Cold Weather Constraint declaration validated by the CEA to determine if it remains valid in accordance with Requirement R9. OR The Generator Owner failed to develop or update a Corrective Action Plan where required by Requirement R9, Part 9.1 (if applicable).

D. Regional Variances

None.

E. Associated Documents

Implementation Plan

Calculating Extreme Cold Weather Temperature

EOP-012-3 Technical Rationale

Generator Cold Weather CAP Extension and Constraint Process

Attachment 1

Generator Owners shall determine the applicability of a Generator Cold Weather Constraint declared under Requirements R2, R6, and R7 using the criteria as described below.

The definition of a Generator Cold Weather Constraint is: "Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would be expected to result in improved generating unit performance during cold temperatures."

A Generator Cold Weather Constraint can be identified using the following criteria:

Known Generator Cold Weather Constraints

The following are circumstances which, if present and confirmed as valid by the CEA, will constitute known Generator Cold Weather Constraints:

- Individual wind turbine towers manufactured prior to October 1, 2029 that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1 for generating units that began commercial operation prior to October 1, 2031.
- Application of freeze protection measures to meet the requirements of this Standard that require:
  - Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities;
  - Removal of accumulated frozen precipitation on solar panels;
  - Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters; or
  - Implementation of heat tracing or other de-icing technologies for wind turbine blades, that, through analysis, have been shown to not be effective or not made available by the OEM for generating units of a comparable types in regions that experience similar winter climate conditions.

Case-by-case Determinations of Generator Cold Weather Constraints

The following situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the CEA will these circumstances constitute a valid Generator Cold Weather Constraint:

1. The implementation of a specific freeze protection measure will void an equipment warranty.
2. The implementation of a specific freeze protection measure would exceed a manufacturer's design limitation and the exceedance is expected to functionally impair or degrade the effective operation of the impacted component or system.

3. The implementation of a specific freeze protection measure is precluded by technical or physical limitations. For example:
    a. Installing wind breaks around a cooling tower or air-cooled heat exchanger that requires free airflow for its functionality;
    b. Implementing freeze protection measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system;
    c. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.
4. A determination, through an analysis, that the freeze protection measure would not be effective for the generating unit. Such a determination may be supported, for example, by fleet or industry operating experience (or lack thereof) with the freeze protection measure on generating unit(s) of comparable types in regions that experience similar winter climate conditions.
5. A determination, through an analysis, that the implementation of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:
    a. The implementation of freeze protection measures, while feasible, would result in the accelerated premature retirement of an existing generating unit with no acceptable replacement available within the accelerated timeframe (must be accompanied by an attestation signed by an officer of the company);
    b. The implementation of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit (must be accompanied by an attestation signed by an officer of the company);
    c. The implementation of freeze protection measures would reduce the generating unit's ability to provide Real Power or Reactive Power capability by more than three percent, or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.), when freeze protection measures are not in use; or
    d. The implementation of freeze protection measures would reduce the summer net dependable capacity[1], or net dependable capacity at Peak Demand, of the generating unit by more than three percent or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.);
    e. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.

[1] "net dependable capacity" refers to the definition used for reporting to the NERC in Generating Availability Data System (GADS) appropriate for the generation type.

6. The implementation of new freeze protection measures to an existing generating unit that has previously communicated a retirement date to the appropriate functional entity (e.g., Transmission Planner (TP), Reliability Coordinator (RC), Balancing Authority (BA), etc.) that falls within three calendar years of the Generator Cold Weather Constraint declaration;
7. The implementation of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.
8. A determination through an analysis that the freeze protection measure is not available on the commercial market for generating units of comparable types in regions that experience similar winter climate conditions.
9. Implementation of freeze protection measures would not increase reliability of a generating unit due to clearly delineated technical or physical reasons on fuel supply which has been communicated to its Reliability Coordinator (RC) or Balancing Authority (BA) and are not due to Fixed Fuel Supply Components, and which are outside the Generator Owner's control.
10. Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Generator Cold Weather Critical Components.

An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

Version History

Version	Date	Action	Change Tracking
1	October 1, 2022	Drafted by Project 2021-07.	New
2	February 16, 2023	Revisions drafted by Project 2021-07 due to FERC Order and inquiry Recommendations.	Revisions
2	February 15,2024	Board Adopted.	
2	June 27, 2024	FERC Approved.	
3	April 4, 2025	Drafted by Project 2024-03, Revised by the Standards Committee under Section 321 of the NERC Rules of Procedure.	As directed by the June 2024 FERC Order

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Implementation Plan

Project 2024-03 Revisions to EOP-012-2
Reliability Standard EOP-012-3

Applicable Standard(s)

- EOP-012-3 Extreme Cold Weather Preparedness and Operations

Requested Retirement(s)

- EOP-012-2 Extreme Cold Weather Preparedness and Operations

Applicable Entities

- Generator Owner (GO)
- Generator Operator (GOP)

Background

The purpose of Project 2024-03 is to address the directives identified by FERC in its June 27, 2024, order approving Reliability Standard EOP-012-2 and directing further modifications. *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61,204 (2024) (June 2024 Order), available here. In that order, FERC found that further improvements are needed to address ambiguous language and other reliability gaps/implementation issues in the standard and related definitions to fully address issues first raised in the Commission's February 2023 Order approving EOP-012-1. *See N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094, PP 3-11 (2023) (February 2023 Order); *reh'g denied*, 183 FERC ¶ 62,034, *order on reh'g*, 183 FERC ¶ 61,222 (2023). In the June 2024 Order, FERC directed that NERC submit the modifications within nine months of the date of the order, or by March 27, 2025.

Proposed EOP-012-3 Requirement R1 is an existing EOP-012-2 requirement that consolidated and clarified requirements for each GO to calculate the Extreme Cold Weather Temperature for its generating unit location(s) and identify generating unit cold weather data, and to review these calculations and data every five years. Proposed EOP-012-3 Requirement R4 and R5 continue the current requirements under EOP-012-2 (with minimal clarifications in Requirement R4), that all GOs develop cold weather preparedness plans and that all GOs or GOPs (as appropriate) conduct annual training on those plans. Proposed EOP-012-3 clarifies which generating unit(s) are subject to the winter operations capability requirements of the standard (Requirements R2 and R3). Proposed EOP-012-3 Requirement R6 provides clarification regarding responses to a Generator Cold Weather Reliability Event that may require Corrective Action Plans (CAPs). Proposed EOP-012-3 Requirement R7 specifies timelines for the completion of CAPs, consistent with the February 2023 Order and FERC directives in its June 2024 Order. The drafting team crafted language to meet the concern of GOs regarding timelines for units under consideration or development. The language reflects

FERC's concern regarding applicability of CAPs to the correct GO. Proposed EOP-012-3 Requirement R9 requires GOs to review constraint declarations at least every 36 calendar months, or as needed, when a change of status occurs and ensures operating limitations caused by the constraints are clearly identified. The revised *Glossary* term for Generator Cold Weather Constraint, and new Attachment 1 both clarify the circumstances under which GOs may declare Generator Cold Weather Constraints.

For additional information on the FERC Order directives addressed in proposed Reliability Standard EOP-012-3, see the Consideration of Directives available on the Project 2024-03 project page.

General Considerations

This implementation plan reflects past consideration that entities need time to develop, implement, and maintain cold weather plans, identify Generator Cold Weather Critical Components, and identify freeze protection measures. The implementation plan also considers the FERC directives regarding the need for an accelerated effective date of directed changes and abbreviated implementation periods for generator winterization measures. FERC has repeatedly expressed an urgency in completing cold weather Reliability Standards and having them implemented in a timely manner to address the risks cold weather events present to the reliability of the Bulk-Power System. FERC noted the five core directives to NERC in the June 2024 Order are not new issues, but rather targeted modifications necessary to fully address issues identified in FERC's prior February 2023 Order. *See* June 2024 Order at P 30.

The drafting team determined that later phased-in compliance dates were not necessary for the revised requirements in EOP-012-3, as the practical impact of implementing the proposed changes, in light of the regulatory history described above, is not expected to be significant:

- For revised Requirement R2, units further into design or construction have separate requirements from those units in the early phases of design: the units further along in the design/construction phase are allowed to develop, implement, and complete CAPs to meet the more rigorous requirements for new generating units, whereas units in the early stages of design are expected to meet the more rigorous requirements unless a Generator Cold Weather Constraint applies. Additional time is not needed to implement this change.
- For revised Requirement R6, relating to Generator Cold Weather Reliability Events, the language reflects the FERC directives regarding CAPs, CAP extensions, and consideration of the applicability of corrective actions across a fleet for Generation Owners that had a generating unit(s) that experienced a Generator Cold Weather Reliability Event. Additional time to implement these changes is not needed, given the conditions in which a CAP Plan may be needed for a Generator Cold Weather Reliability Event.
- For revised Requirement R7, the drafting team clarified the applicability of CAP requirements and provided CAP extension request language similar to that found in

Reliability Standard TPL-007-4 to address the June 2024 Order. Additional guidance is provided below.

In consideration of these factors, and to ensure entities have sufficient notice of their revised obligations under Reliability Standard EOP-012-3, the proposed implementation plan provides that the standard shall become effective on the later of October 1, 2025, which is the date Reliability Standard EOP-012-2 will be fully enforceable in the United States, or three months following regulatory approval.

Additional guidance is provided to aid in the orderly implementation of the standard as entities transition from compliance with Reliability Standard EOP-012-2 to Reliability Standard EOP-012-3.

Effective Date

The effective dates for the proposed Reliability Standards are provided below. Where the drafting team identified or recognized the need for a longer implementation period for compliance with a particular section of a proposed Reliability Standard (i.e., an entire Requirement or a portion thereof), the additional time for compliance with that section is specified below. The phased-in compliance date for those particular sections represents the date that entities must be compliant with that particular section of the Reliability Standard, even where the Reliability Standard goes into effect at an earlier date.

EOP-012-3 and Definitions

Where approval by an applicable governmental authority is required, the standard and associated definitions shall become effective on the later of: (1) October 1, 2025; or (2) the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.

Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

Additional Implementation Information and Phased-In Compliance Date

This section provides additional information of Reliability Standard EOP-012-3 in the United States. In non-U.S. jurisdictions that have not adopted prior versions of the standard or have established different dates for Requirement R2 or R3, entities shall implement the standard with dates appropriate to their jurisdiction, or as directed by the Applicable Governmental Authority.

EOP-012-3 Requirement R1

In the United States, entities were required to become compliant with Requirement R1 by the effective date of EOP-012-2 (October 1, 2024) in accordance with that implementation plan. Entities shall perform their first periodic review under Reliability Standard EOP-012-3 Requirement R1 by no more than 60 months after the effective date of **EOP-012-2**.[1]

EOP-012-3 Requirement R2 – New Generating Units entering commercial operation on/after October 1, 2027

Entities shall become compliant with Requirement R2 no later than the commercial operations date for the applicable unit, except as provided below. Any Generator Cold Weather Constraint shall be submitted in accordance with the timeline provided in Requirement R8.

For generating units for which the GO first contractually committed[2] to design criteria relevant to this Requirement before June 29, 2023, and which enter commercial operation between October 1, 2027 and March 31, 2028, the GO shall comply with Requirement R2 relating to implementing required capability by no later than April 1, 2028. If declaring a Generator Cold Weather Constraint, the Generator Cold Weather Constraint shall be submitted in accordance with the timeline provided in Requirement R8.

EOP-012-3 Requirement R3 – Existing and New Generating Units entering commercial operation before October 1, 2027

Entities beginning commercial operation after the effective date of EOP-012-3 shall become compliant with Requirement R3 no later than the commercial operations date for the applicable unit.

EOP-012-3 Requirement R8

Entities shall review all Generator Cold Weather Constraints previously declared under Reliability Standard EOP-012-2 for compliance with Reliability Standard EOP-012-3 Attachment 1 by the effective date. Each entity shall submit any previously declared Generator Cold Weather Constraints to the Compliance Enforcement Authority (CEA) no later than 45 days following the effective date of Reliability Standard EOP-012-3. Newly declared Generator Cold Weather Constraints shall be submitted in accordance with the timelines specified in Requirement R8.

EOP-012-3 Requirement R9

If applicable, entities shall review each Generator Cold Weather Constraint in accordance with Requirement R9 no later than 36 calendar months following validation by the CEA.

[1] In jurisdictions where EOP-012-2 has not become effective, entities shall perform their first periodic review under Reliability Standard EOP-012-3 Requirement R1 by no later than five calendar years following the initial calculation of the Extreme Cold Weather Temperature, or as directed by the applicable governmental authority in the jurisdiction.

[2] Such commitments would be demonstrated by signed contracts creating a binding legal agreement with respect to the design criteria for the unit.

Retirement Date of EOP-012-2

Reliability Standard EOP-012-2 shall be retired immediately prior to the effective date of Reliability Standard EOP-012-3 in the particular jurisdiction in which the revised standard is becoming effective.

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Implementation Plan

Project 2024-03 Revisions to EOP-012-2
Reliability Standard EOP-012-3

Applicable Standard(s)

- EOP-012-3 Extreme Cold Weather Preparedness and Operations

Requested Retirement(s)

- EOP-012-2 Extreme Cold Weather Preparedness and Operations

Applicable Entities

- Generator Owner (GO)
- Generator Operator (GOP)

Background

The purpose of Project 2024-03 is to address the directives identified by FERC in its June 27, 2024, order approving Reliability Standard EOP-012-2 and directing further modifications. *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61,204 (2024) (June 2024 Order), available here. In that order, FERC found that further improvements are needed to address ambiguous language and other reliability gaps/implementation issues in the standard and related definitions to fully address issues first raised in the Commission's February 2023 Order approving EOP-012-1. *See N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094, PP 3-11 (2023) (February 2023 Order); *reh'g denied*, 183 FERC ¶ 62,034, *order on reh'g*, 183 FERC ¶ 61,222 (2023). In the June 2024 Order, FERC directed that NERC submit the modifications within nine months of the date of the order, or by March 27, 2025.

Proposed EOP-012-3 Requirement R1 is an existing EOP-012-2 requirement that consolidated and clarified requirements for each ~~Generator Owner~~GO to calculate the Extreme Cold Weather Temperature for its generating unit location(s) and identify generating unit cold weather data, and to review these calculations and data every five years. Proposed EOP-012-3 Requirement R4 and R5 continue the current requirements under EOP-012-2 (with minimal clarifications in Requirement R4), that all ~~Generator Owners~~GOs develop cold weather preparedness plans and that all ~~Generator Owners or Generator Operators~~GOs or GOPs (as appropriate) conduct annual training on those plans. Proposed EOP-012-3 clarifies which generating unit(s) are subject to the winter operations capability requirements of the standard (Requirements R2 and R3). Proposed EOP-012-3 Requirement R6 provides clarification regarding responses to a Generator Cold Weather Reliability Event that may require Corrective Action Plans (CAPs). Proposed EOP-012-3 Requirement R7 specifies timelines for the completion of ~~Corrective Action Plans~~CAPs, consistent with the February 2023 Order and FERC directives in its June 2024 Order. The drafting team crafted language to meet

the concern of ~~Generator Owners~~GOs regarding timelines for units under consideration or development. The language reflects FERC's concern regarding applicability of ~~Corrective Action Plans~~CAPs to the correct ~~Generator Owner~~GO. Proposed EOP-012-3 Requirement R9 requires ~~Generator Owners~~GOs to review constraint declarations at least every 36 calendar months, or as needed, when a change of status occurs and ensures operating limitations caused by the constraints are clearly identified. The revised *Glossary* term for Generator Cold Weather Constraint, and new Attachment 1 both clarify the circumstances under which ~~Generator Owners~~GOs may declare Generator Cold Weather Constraints.

For additional information on the FERC Order directives addressed in proposed Reliability Standard EOP-012-3, see the Consideration of Directives~~,~~ available on the Project 2024-03 project page.

General Considerations

This implementation plan reflects past consideration that entities need time to develop, implement, and maintain cold weather plans~~;~~, identify Generator Cold Weather Critical Components, and identify freeze protection measures. The implementation plan also considers the FERC directives regarding the need for an accelerated effective date of directed changes and abbreviated implementation periods for generator winterization measures. FERC has repeatedly expressed an urgency in completing cold weather Reliability Standards and having them implemented in a timely manner to address the risks cold weather events present to the reliability of the Bulk-Power System. FERC noted the five core directives to NERC in the June 2024 Order are not new issues, but rather targeted modifications necessary to fully address issues identified in FERC's prior February 2023 Order. *See* June 2024 Order at P 30.

The drafting team determined that later phased-in compliance dates were not necessary for the revised requirements in EOP-012-3, as the practical impact of implementing the proposed changes, in light of the regulatory history described above, is not expected to be significant:

- For revised Requirement R2, units further into design or construction have separate requirements from those units in the early phases of design: the units further along in the design/construction phase are allowed to develop, implement, and complete ~~Corrective Action Plans~~CAPs to meet the more rigorous requirements for new generating units, whereas units in the early stages of design are expected to meet the more rigorous requirements unless a Generator Cold Weather Constraint applies. Additional time is not needed to implement this change.
- For revised Requirement R6, relating to Generator Cold Weather Reliability Events, the language reflects the FERC directives regarding ~~Corrective Action Plans,~~ ~~Corrective Action Plan~~CAPs, CAP extensions, and consideration of the applicability of corrective actions across a fleet for Generation Owners that had a generating unit(s) that experienced a Generator Cold Weather Reliability Event. Additional time to implement these changes is not needed, given the conditions in which a ~~Corrective Action~~CAP Plan may be needed for a Generator Cold Weather Reliability Event.

- For revised Requirement R7, the drafting team clarified the applicability of ~~Corrective Action Plan~~CAP requirements and provided ~~Corrective Action Plan~~CAP extension request language similar to that found in Reliability Standard TPL-007-4 to address the June 2024 Order. Additional guidance is provided below.

In consideration of these factors, and to ensure entities have sufficient notice of their revised obligations under Reliability Standard EOP-012-3, the proposed implementation plan provides that the standard shall become effective on the later of October 1, 2025, which is the date Reliability Standard EOP-012-2 will be fully enforceable in the United States, or three months following regulatory approval.

Additional guidance is provided to aid in the orderly implementation of the standard as entities transition from compliance with Reliability Standard EOP-012-2 to Reliability Standard EOP-012-3.

Effective Date

The effective dates for the proposed Reliability Standards are provided below. Where the drafting team identified or recognized the need for a longer implementation period for compliance with a particular section of a proposed Reliability Standard (i.e., an entire Requirement or a portion thereof), the additional time for compliance with that section is specified below. The phased-in compliance date for those particular sections represents the date that entities must be compliant with that particular section of the Reliability Standard, even where the Reliability Standard goes into effect at an earlier date.

EOP-012-3 and Definitions

Where approval by an applicable governmental authority is required, the standard and associated definitions shall become effective on the later of: (1) October 1, 2025; or (2) the first day of the first calendar quarter that is three (3) months after the effective date of the applicable governmental authority's order approving the standard, or as otherwise provided for by the applicable governmental authority.

Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is three (3) months after the date the standard is adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

Additional Implementation Information and Phased-In Compliance Date

This section provides additional information of Reliability Standard EOP-012-3 in the United States. In non-U.S. jurisdictions that have not adopted prior versions of the standard or have established different dates for Requirement R2 or R3, entities shall implement the standard with dates appropriate to their jurisdiction, or as directed by the Applicable Governmental Authority.

EOP-012-3 Requirement R1

In the United States, entities were required to become compliant with Requirement R1 by the effective date of EOP-012-2 (October 1, 2024) in accordance with that implementation plan. Entities shall perform their first periodic review under Reliability Standard EOP-012-3 Requirement R1 by no more than 60 months after the effective date of **EOP-012-2**.[1]

EOP-012-3 Requirement R2 – New Generating Units entering commercial operation on/after October 1, 2027

Entities shall become compliant with Requirement R2 no later than the commercial operations date for the applicable unit, except as provided below. Any Generator Cold Weather Constraint shall be submitted in accordance with the timeline provided in Requirement R8.

For generating units for which the GO first contractually committed[2] to design criteria relevant to this Requirement before June 29, 2023, and which enter commercial operation between October 1, 2027 and March 31, 2028, the GO shall comply with Requirement R2 relating to implementing required capability by no later than April 1, 2028. If declaring a Generator Cold Weather Constraint, the Generator Cold Weather Constraint shall be submitted in accordance with the timeline provided in Requirement R8.

EOP-012-3 Requirement R3 – Existing and New Generating Units entering commercial operation before October 1, 2027

Entities beginning commercial operation after the effective date of EOP-012-3 shall become compliant with Requirement R3 no later than the commercial operations date for the applicable unit.

EOP-012-3 Requirement R8

Entities shall review all Generator Cold Weather Constraints previously declared under Reliability Standard EOP-012-2 for compliance with Reliability Standard EOP-012-3 Attachment 1 by the effective date. Each entity shall submit any previously declared Generator Cold Weather Constraints to the Compliance Enforcement Authority (CEA) no later than 45 days following the effective date of Reliability Standard EOP-012-3. Newly declared Generator Cold Weather Constraints shall be submitted in accordance with the timelines specified in Requirement R8.

EOP-012-3 Requirement R9

If applicable, entities shall review each Generator Cold Weather Constraint in accordance with Requirement R9 no later than 36 calendar months following validation by the ~~Compliance Enforcement Authority~~CEA.

[1] In jurisdictions where EOP-012-2 has not become effective, entities shall perform their first periodic review under Reliability Standard EOP-012-3 Requirement R1 by no later than five calendar years following the initial calculation of the Extreme Cold Weather Temperature, or as directed by the applicable governmental authority in the jurisdiction.

[2] Such commitments would be demonstrated by signed contracts creating a binding legal agreement with respect to the design criteria for the unit.

Retirement Date of EOP-012-2

Reliability Standard EOP-012-2 shall be retired immediately prior to the effective date of Reliability Standard EOP-012-3 in the particular jurisdiction in which the revised standard is becoming effective.

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Technical Rationale

Project 2024-03 Revisions to EOP-012-2
Reliability Standard EOP-012-3 | March 2025

EOP-012-3 – Extreme Cold Weather Preparedness and Operations

Introduction

This document explains the technical rationale and justification for the proposed Reliability Standard EOP-012-3. It provides stakeholders and the ERO Enterprise with an understanding of the technology and technical requirements in the Reliability Standard. This Technical Rationale and Justification for EOP-012-3 is not a Reliability Standard and should not be considered mandatory and enforceable.

Background

From February 8 through February 20, 2021, extreme cold weather and precipitation caused large numbers of generating units to experience outages, derates or failures to start, resulting in energy and transmission emergencies (referred to as the "Event"). The total Event firm load shed was the largest controlled firm load shed event in U.S. history and was the third largest in quantity of outaged megawatts (MW) of load after the August 2003 Northeast blackout and the August 1996 West Coast blackout. The Event was most severe from February 15 through February 18, 2021, and it contributed to power outages affecting millions of electricity customers throughout the regions of ERCOT, SPP, and MISO South. Additionally, the February 2021 event is the fourth cold weather event in the past 10 years, which jeopardized Bulk Power System (BPS) reliability. A joint inquiry was conducted to discover reliability-related findings and develop recommendations from Federal Energy Regulatory Commission (FERC), NERC, and Regional Entity staff. The FERC, NERC, and Regional Entity Staff Report about the February 2021 Cold Weather Outages[1] ("Joint Inquiry Report") was published on November 16, 2021.

Project 2021-07 was a two-phase project to address the 10 sub-recommendations in Key Recommendation 1 of the Joint Inquiry Report for new or enhanced NERC Reliability Standards. Reliability Standard EOP-012-1 was originally developed to address Recommendations 1d, 1e, and 1f of the Joint Inquiry Report through new and enhanced requirements for generator preparedness for extreme cold weather conditions. Reliability Standard EOP-012-2 was revised to address Key Recommendations 1a, 1b, and 1c as well as the FERC directives in the February 2023 Order approving the Phase 1 standards EOP-011-3 and EOP-012-1.[2] Reliability Standard EOP-012-3 is being revised to address FERC directives in the June 2024 Order approving EOP-011-4 and EOP-012-2[3].

1 The February 2021 Cold Weather Outages in Texas and the South Central United States | FERC, NERC and Regional Entity Staff Report | Federal Energy Regulatory Commission

2 *N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094 (2023) (FERC Order), *notice denying reh'g and providing for further consideration*, 183 FERC ¶ 62,034 (2023).

3 *N.AM.Elec.Reliability Corp.*, 187 FERC ¶ 61,204 (FERC Order)

Defined Terms

Previous drafting teams (DTs) developed five defined terms to be added to the NERC Glossary of Terms to make the requirements easier to understand. Project 2024-03 updated the term "Generator Cold Weather Constraint" to meet the FERC directives in the June 2024 Order and provided additional language to clarify issues noted during the development of EOP-012-3, 2024 Small Group Advisory Session(s), and input received during outreach with industry. The five terms are:

Extreme Cold Weather Temperature

The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 1/1/2000 through the date the temperature is calculated.

The definition of Extreme Cold Weather Temperature (ECWT) was developed by the 2021-07 DT to provide clarity to the Generator Owner (GO) on determining what temperature triggers the requirement obligations. Each GO should select a reliable source of data from a recording location near the plant to determine their ECWT. Sources could include, for example, the National Weather Service (NWS) or National Oceanographic and Atmospheric Administration (NOAA) weather stations, Federal Aviation Administration (FAA) weather stations, or Environment and Climate Change Canada location for Canadian entities[4], etc. NOAA's National Centers for Environmental Information provides Climate Data Online (CDO) as a free resource that includes quality-controlled weather data and 30-year Climate Normals[5]. In general, GOs should use the location nearest the plant, but may select a further location if geographic or local climatic patterns make a further location more representative of the weather at the generating unit. GOs may use on-site weather stations if data, which reasonably matches reliable nearby off-site sources since January 1, 2000, is available. The starting period chosen by the 2021-07 DT to gather data to determine the lowest temperatures that occur near a facility is based on the completion of the modernization of the National Weather Service project known as MAR (Modernization and Associated Restructuring). This project was completed in the year 2000. In general, the National Weather Service modernization provides weather data to be available at most large airports. This will make it fairly accessible for companies to gather data and perform the required analysis. The December through February timeframe was selected to correspond to the meteorological winter, as defined by NOAA.[6]

The 2021-07 DT discussed methods for determining an ECWT with engineering design professionals, and it was determined that it is typical engineering practice to use a statistical approach to determine the design temperature when implementing generation facility freeze protection measures. The 2021-07 DT determined that only winter temperature values (i.e. between December and February) shall be used for the statistical approach and based on analysis of multiple weather data sites. It was determined that by using the lowest 0.2 percentile, there will be sufficient data points to ensure that a single hour at a temperature that may not be accurate, or may be a statistical anomaly, doesn't result in an overly conservative design or preclude the ability of the GO to use historical operating data to prove compliance to the requirements. The 2021-07 DT selected the 0.2 percentile of winter month temperatures since 1/1/2000 to identify a temperature which has been rarely surpassed, but which allows some margin for a

4 Environment and Climate Change Canada - Canada.ca
5 U.S. Climate Normals | National Centers for Environmental Information (NCEI) (noaa.gov)
6 Meteorological Versus Astronomical Seasons | News | National Centers for Environmental Information (NCEI) (noaa.gov)

GO to have previously demonstrated successful operation. The 2021-07 DT considered using the lowest recorded hourly ambient temperature, but upon further review of the historical weather data and generally accepted design principles, determined that the statistical approach to setting the ECWT for a site's location was more reasonable.

The 2024-03 DT recognized comments and concerns raised during the 2024 Small Group Advisory Session on cold weather preparedness regarding application of the ECWT calculation if hourly temperature values were questionable. If complete data sets are not available (e.g., data is corrupt or missing) at a single weather station back to January 1, 2000, the GO should document the methodology they use to determine their ECWT, such as appending data from multiple weather stations or selecting a complete or partial data set from a weather station further away from the facility. The 2021-07 and 2024-03 DTs realized that a complete data set (i.e., all hours of every day of every year for the months of December, January, and February) may not be available due to a variety of technical reasons. To that point, the GO's approach in handling the missing/corrupt data should be documented in their methodology and available to Compliance Monitoring Enforcement Program (CMEP) staff as needed. To accommodate concerns raised by industry, the 2024-03 DT felt additional clarification was needed to address missing data and set an expectation for entities to meet when reviewing the inputs to the ECWT calculations within Requirement R1. Entities should be able to explain the reasoning behind the substitution of missing or corrupt data points.

It has been noted by the industry that there may be the possibility of missing temperature data utilized for the ECWT calculation. The 2024-03 DT discussed data completeness concerns and, after considering the likely variability in such hourly temperature data sets across North America, ultimately chose not to establish a requirement regarding the size of the data set necessary to support an accurate ECWT determination. The 2024-03 DT understands the entity may very well have an overall approach to missing data versus a generating unit-by-unit approach. By the nature of the percentile function, significant data loss may not change the ECWT value. The key is where the data is missing in relationship to the ECWT determined value. Note that compliance obligations when the ECWT is determined near 32 degrees Fahrenheit, tend to dictate the need for a more rigorous level of effort needed to help determine possible impacts of missing temperature data. Missing hourly temperature values above the ECWT has limited impact to the determination. However, missing hourly temperature values below the ECWT can impact the ECWT determination value. For example, the 0.2 percentile of 50,000 hourly values equates to 100 hourly values (in this case the lowest recorded hourly temperatures.) If there are missing hourly values that would have been included in the list of the lowest 100 hourly temperature values, those values should be explained by the entity and may warrant further review. Missing data in the lowest 100 values effectively has the potential of moving the ECWT value higher but that is dependent upon the data set. This simplified example is intended to demonstrate a principle; not establish a fixed number of lowest temperature values of concern. Any data set with missing or invalid hourly temperature values recorded during the coldest periods since January 1, 2000 should be carefully evaluated to ensure that any adjustments utilized on those particular values are properly addressed in a transparent and logical way. Please reference the Calculating Extreme Cold Weather Temperature document drafted by the 2021-07 DT and updated by the 2024-03 DT for an example of how to calculate the ECWT[7].

7 Report (nerc.com)

Generator Cold Weather Critical Component

Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

The 2021-07 DT felt the best method to address where freeze protection measures should be implemented was to define a term which specifies a subset of components that may be susceptible to freezing and are critical to the operation of generating units. GOs should consider previous freeze-related issues experienced by the generating unit(s), as well as actions taken to mitigate those freeze-related issues, when establishing its list of Cold Weather Critical Components. The 2021-07 DT also felt it is appropriate to specifically exclude components that are not susceptible to freezing due to being inside heated buildings that maintain the interior temperature above freezing.

The 2021-07 DT's intent with regard to the language "that is under the Generator's Owner's control" was to clearly delineate that cold weather events external to the generation site such as loss of fuel supply or loss of auxiliary power to the site that resulted in a Generator Cold Weather Reliability Event (see definition below) would not be subject to this standard. Furthermore, ice buildup on transmission lines and/or high voltage lines between the generating station and point of interconnection with the Transmission Owner would not constitute a freezing condition in the context of this Standard, and therefore, these lines would not be considered a Generator Cold Weather Critical Component.

The 2021-07 DT's intent with the use of the phrase "permanent building" is to refer to a structure that is in place year-round, shall accommodate personnel entry, and has a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit for the purpose of protecting components from freezing (e.g. heated container that protects inverter-based resources or battery energy systems). The 2024-03 DT recognized comments and concerns raised during the 2024 Small Group Advisory Session on cold weather preparedness regarding heating of the "permanent building." The HVAC/heating system is not a freeze protection measure in terms of being included in the cold weather preparedness plan as it is not protecting a Generator Cold Weather Critical Component (per the definition) nor is it a Generator Cold Weather Critical Component. The 2024-03 DT expects the HVAC/heating system to be part of routine maintenance and monitoring to ensure that the heated building remains above 32 degrees Fahrenheit.

Fixed Fuel Supply Component

Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

The 2021-07 DT wanted to clarify the boundaries of responsibility for the GO as it relates to sites having fuel handling equipment within their control and responsibility to provide freeze protection. The intent of

this definition is to clarify that mobile equipment is not part of this requirement, but permanent fixed equipment impacting fuel delivery needed for generation is included.

Generator Cold Weather Reliability Event

One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

Key Recommendation 1d: To require Generator Owners that experience outages, failures to start, or derates due to freezing to review the generating unit's outage, failure to start, or derate and develop and implement a corrective action plan (CAP) for the identified equipment, and evaluate whether the CAP applies to similar equipment for its other generating units. Based on the evaluation, the Generator Owner will either revise its cold weather preparedness plan to apply the CAP to the similar equipment, or explain in a declaration (a) why no revisions to the cold weather preparedness plan are appropriate, and (b) that no further corrective actions will be taken. The standard drafting team should specify the specific timing for the CAP to be developed and implemented after the outage, derate, or failure to start, but the CAP should be developed as quickly as possible, and be completed by no later than the beginning of the next winter season.

The Key Recommendation from the Joint Inquiry Report recommends a Reliability Standard that requires GOs to develop a Corrective Action Plan for generating units that experience outages, failures to starts, or derates due to freezing. The Joint Inquiry Report identifies that most of the outages and derates in the February 2021 event were due to freezing of instrumentation, transmitters, sensing lines, or wind turbine blades (p 166 in the Joint Inquiry Report). As such, the 2021-07 DT followed the Joint Inquiry Report recommendation to require a Corrective Action Plan when the apparent cause of the event is freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, or freezing rain) on equipment. The 2021-07 DT felt that it was important to clearly call out freezing precipitation as these events were included in the outages and derates that identified as freezing in the Joint Inquiry Report. Furthermore, Key Recommendation 1c of the report requires GOs to account for the effect of precipitation. The 2021-07 DT has developed parameters around these events to clarify a reasonable baseline of what level of derate qualifies as an event, and provide additional language to identify what constitutes a start-up failure. With the additional clarifications, the 2021-07 DT determined that the standard would benefit from a defined term, to clearly and efficiently state what constitutes an event. The result is a new defined term, Generator Cold Weather Reliability Event, that defines the circumstances for which a Corrective Action Plan is required (i.e., when a freezing event affects the equipment within the control of the GO). The defined term will make the standard easier to understand and implement by providing clear and reasonable factors to determine whether the impact of an event requires mitigation. The 2021-07 DT is

using the definition of apparent as defined in the Webster's dictionary as "clear or manifest to the understanding".

Note that the 2024-03 DT provided additional language to alleviate concerns regarding the administrative nature of developing Corrective Action Plans specifically for similar noted issues occurring at one or more locations (e.g., freezing precipitation on wind turbines). Care should be taken if updating existing Corrective Action Plans for additional units especially in terms of effectively capturing the actions and timetables applicable to the additional units.

The Corrective Action Plan requirement applies to any forced outage due to freezing, regardless of duration. Derates, which are short lived (specified as four hours by the 2021-07 DT) or of small capacity impact (specified as less than 20 MW by the 2021-07 DT, which roughly corresponds with the threshold for Bulk Electric System (BES) impacting generation units), are excluded from the Corrective Action Plan requirement to limit the administrative burden to GOs for events that are minimally impacting to the BES. Also excluded are proactive operational actions to limit the potential of forced outages or derates. It should be noted that nothing in this standard prevents a GO from taking its own corrective actions resulting from such events. Startup failures for conventional generation are defined using the Generating Availability Data System (GADS) definition with the removal of "following an outage or reserve shutdown", since reserve shutdown is defined differently by NERC in GADS than it is by some of the Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs). From the GADS data reporting instructions, the startup period for each unit is determined by the operating company. It is unique for each unit and may depend on the condition of the unit at the time of startup (cold, warm, or hot). A typical unit startup occurs in three phases: warm up, synchronization, and ramp up. NERC defines a startup period to begin with the command to start and end when the unit is synchronized. A startup failure begins when a problem, preventing the unit from synchronizing, occurs. The startup failure ends when the unit is synchronized, another startup failure occurs, or the unit enters another permissible state.

The 2021-07 DT determined that Corrective Action Plans will be required for any freezing event that occurs at temperatures above the generator site's ECWT. By using the site's ECWT, as opposed to the generator unit minimum temperature as defined by the GO in Requirement R1 Part 1.2.2 as the threshold, this achieves the following:

- Provides a consistent basis for the temperature at which CAPS are required for all GOs
- Provides a consistent basis for when Corrective Action Plans are required for all generation types
- Provides a consistent basis for when Corrective Action Plans are required regardless of the level of effort that GOs may have applied to-date winterizing their generators such that they can operate to the ECWT that their sites will reasonably experience
- Removes any incentive (perceived or real) to not further winterize GOs generating sites to meet the ECWT at the GO site by not providing a window where one site might not be subject to the Corrective Action Plan requirement while sites in the same vicinity experiencing the same temperatures are subject to this requirement

- Removes any disincentive for GOs to design the units to operate well below the ECWT for a site by not requiring them to perform Corrective Action Plans while sites in the same vicinity experiencing the same temperatures are subject to this requirement

Generator Cold Weather Constraint

Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would be expected to result in improved generating unit performance during cold temperatures.

The 2024-03 DT reviewed the material from the June 2024 Order when determining how best to update the Generator Cold Weather Constraint definition. The 2024-03 DT relied upon industry and FERC guidance as a basis for updating the definition language and the process captured in Attachment 1 of EOP-012-3. The 2024-03 DT also ensured that constraint language would be fully captured within the Standard itself through Attachment 1. Based on comments received during the ROP 321 comment period, additional revisions were made to clarify the scope of freeze protection measures that may be precluded by a constraint (i.e. not just optimum solutions, but other solutions expected to improve performance).

The 2024-03 DT felt that an Attachment that included specific language further explaining Generator Cold Weather Constraints with discrete known Generator Cold Weather Constraints and other case-by-case Generator Cold Weather Constraints meets the FERC (and industry) expectations to provide unambiguous, objective, and auditable language. The 2024-03 DT discussed providing clarity with examples knowing that additional instances or conditions that may be considered a Generator Cold Weather Constraint may exist.

Per the FERC Order, NERC staff are responsible to provide a process describing the receipt, evaluation, approval (as needed), and validation of Generator Cold Weather Constraints. This process is captured in the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") document.

Attachment 1 contains a non-comprehensive list of known Generator Cold Weather Constraints as well as a list of situations, circumstances, and criteria that may constitute a Generator Cold Weather Constraint. The GO **must** submit all Generator Cold Weather Constraints to the Compliance Enforcement Authority (CEA) for approval, regardless of which category it might fall into.

Once a declaration is approved by the CEA, it is considered valid. It is the GO's responsibility to document, in the Generator Cold Weather Constraint declaration, the circumstances and reasons why the modification needed to address the freeze protection measure(s) is not being implemented. A Generator Cold Weather Constraint declaration, that no further corrective actions will be taken, is expected to be used sparingly.

The 2024-03 DT is intentionally leaving room for additional instances of Generator Cold Weather Constraints as it would be impossible to foresee every potential circumstance that could possibly necessitate a review of potential freeze protection technologies across the breadth of the United States and Canada and the breadth of generating unit types and ages that fall under this Standard. Furthermore, the 2024-03 DT wants to ensure the Standard language supports the adoption of new freeze protection measure practices, methods, or technologies while not immediately requiring a new freeze protection measure practice, method, or technology to be implemented industry-wide when a leading utility pilots a novel approach, as this would be a disincentive to utilities piloting new technologies. The 2024-03 DT encourages additional studying and implementation of freeze protection measures to remove Generator Cold Weather Constraints as appropriate over time.

In the June 2024 Order, there was a directive to change the frequency of Generator Cold Weather Constraint reviews to facilitate consideration of new freeze protection measure technologies to reduce the risk resulting from the need for a Generator Cold Weather Constraint. That change is captured in Requirement R9 discussed later in this Technical Rationale document.

Facilities

After reviewing the reference material and the efforts of the 2021-07 DT, the 2024-03 DT determined that EOP-012-3 should continue to apply to all BES generating units in order to ensure consistency in extreme cold weather preparedness. The Applicability section first defines "generating unit" as a BES resource. The NERC Glossary of Terms provides the foundation for what BES resources are included in the definition (see Inclusions I2 through I4). Additionally, Blackstart Resources are also specifically declared subject to the winterization requirements. Such Blackstart Resources, consistent with the NERC Glossary of Terms, are those units designated in the Transmission Operator's (TOP) restoration plans. Proposed EOP-012-3 clarifies which Facilities and their Generator Cold Weather Critical Components are subject to implementing freeze protection measures through specific language in Requirements R2 and R3. The 2024-03 DT briefly discussed GO Category 2 Inverter-Based Resource (IBR) applicability to EOP-012-3 but it was noted the applicability is under review as part of the Registration of IBR Work Plan so no changes were presented.

Rationale for Requirement R1

The Project 2024-03's Technical Rationale language for Requirement R1 did not substantially change from 2021-07 DT language and, as such, use of DT below is referencing 2021-07 DT. Much of the criteria of R1 is carried over from the previously approved EOP-011 Standard and requires the GO to document several cold weather performance parameters for the unit. This information is valuable and must be shared with other entities per their data specifications. For Requirement R1 Part 1.1, the GO is required to calculate the Extreme Cold Weather Temperature (ECWT) for each unit using a reliable source of data (See the supporting document "Calculating Extreme Cold Weather Temperature"). The DT believes that the GO is in the best position to select the most representative weather information relative to its generating unit. The ECWT will be updated if a new lower ECWT is determined under the periodic review requirement of R1. Defining the operating limitations in Requirement R1 Part 1.2.1 will make affected personnel more aware of unit capabilities and constraints as well as systems and practices that may be necessary to ensure reliability in cold weather, particularly when alternative fuels are involved. In addition, the unit minimum temperature identified in Requirement R1 Part 1.2.2 is used to support demonstrating compliance with Requirement R3 for existing units. The DT chose one hour of historical operating data recognizing there is extremely limited historical operating data available for a unit below their ECWT. This was not to infer the DT expects that existing generation will only reliably operate for one hour during an extreme cold weather event. The information contained within Requirement R1 Part 1.2 is required to be requested by the BAs in TOP-003 to make sure they have the most accurate unit performance information possible for their reliability analysis during the winter season. It is critical, especially if a Corrective Action Plan, extension request for a Corrective Action Plan, or a Generator Cold Weather Constraint declaration is in effect, that the GO keep Requirement R1 Part 1.2 information updated with those entities requiring said information. The 2024-03 DT did not add a notification Requirement to EOP-012-3 as TOP-003 and IRO-010 obligate the applicable entities (Balancing Authority (BA), Reliability Coordinator (RC), and Transmission Operator (TOP)) to have "*Provisions for notification of BES generating unit(s) during local*

forecasted cold weather to include" Requirement R1 Part 1.2 information. BAs, RCs, and TOPs should have already reviewed their data specifications with regards to EOP-012. The flexibility that industry has required in the determination of data specifications were limited by industry approved Standard language regarding cold weather data and attributes. BAs, RCs, and TOPs should ensure complete coverage and timeliness of Requirement R1 Part 1.2 data submission within their data specifications especially during local forecasted cold weather.

It is recognized that the determination of a single unit minimum temperature is of limited value if applied without consideration of the other ambient conditions under which it was determined, that is, wind and precipitation. Consideration of wind and precipitation, along with the minimum temperature, provides a greater understanding of the potential generating unit capability for cold weather resource planning. The Standard requires that the GO include wind and precipitation data with their generating unit minimum temperature data when the data is available. The impact of deviations from this known temperature/wind/precipitation stated point are expected to be evaluated qualitatively. For example, if the historical minimum temperature occurred at low wind and dry conditions, and actual future cold weather event expected conditions are high winds with precipitation, planning personnel will recognize that a specific unit may not achieve the minimum temperature and can arrange for additional resources. The opposite also applies, i.e., if a design minimum temperature assumes some level of wind and precipitation and actual cold weather expectations are for low wind and dry conditions, planning personnel will recognize that there is increased likelihood that a generation resource may continue to be available below its minimum temperature. If no information about wind or precipitation is known, wind and precipitation are assumed to be zero at the minimum temperature until further information is obtained. The 2024-03 DT did provide updated language within the "Defined Terms" section of this Technical Rationale document to capture concerns regarding ECWT data availability.

Rationale for Requirement R2

The Joint Inquiry Report Key Recommendation 1f referenced recommendation 12 of the 2011 report[8] suggesting that consideration should be given to designing all new generation plants and designing modifications to existing plants (unless committed solely for summer peaking purposes) to be able to perform at the lowest recorded ambient temperature for the nearest location for which historical weather data is available.

In developing the original version of the EOP-012 Reliability Standard, Reliability Standard EOP-012-1, the Project 2021-07 DT determined to impose different cold weather capability requirements for new generation compared to existing generation. Consistent with Key Recommendation 1f of the February 2021 Event Report, GOs would be required to design new units to operate to a specified ambient temperature (the ECWT) and weather conditions for the location, accounting for the cooling effects of wind. Due to the difficulty of performing the same level of design analysis on existing generation as on

8 https://www.nerc.com/pa/rrm/ea/February%202011%20Southwest%20Cold%20Weather%20Event/SW_Cold_Weather_Event_Final.pdf

new generation, the high threshold of the ECWT, and the expected availability of historical data to support sustained operations at that ECWT, the Project 2021-07 DT determined to impose less stringent requirements for retrofitting existing generating units. The Project 2021-07 DT initially specified the "effective date of the requirement," which would be determined in accordance with the EOP-012-1 Implementation Plan, as establishing which set of generators would be "grandfathered" and subject to the less stringent requirements, and which generators would be subject to the more stringent requirements for new generation.

The 2021-07 DT chose 12 hours of continuous operation because it is a typical length of the nighttime in winter in most regions of the US and Canada and typically include the hours with the coldest experienced temperatures. The 2021-07 DT was of the opinion that tying the requirement to the 12-hour period would provide a reasonable level of reliability during a cold weather event. The 2021-07 DT chose a concurrent sustained 20 mph wind speed after an evaluation using the wind chill formula developed by the NWS in the United States. Though wind chill temperature is not an exact science, it is widely understood to reflect the **non-linear increased rate of convective heat loss due to air moving at different velocities**. Commonly available charts show wind chill temperatures as a function of actual air temperature at various wind speeds. Approximately 2/3 of the wind chill temperature drop between 0–60 mph is achieved at 20 mph. Using the NWS chart, this holds true for still air temperatures starting at 40ºF and dropping in 20-degree increments to -40°F. Further, 20 mph is a wind speed commonly experienced across the ERO and yet appropriately higher than the approximate average wind speeds in the United States and Canada, 6-12 mph and 8-11 mph respectively. GOs may apply a wind chill calculation in determining their ability to meet the criteria in Requirement R2. It should be noted that solar and battery OEMs provide little guidance on their facilities capability to perform in cold weather and wind combined. Depending on how a GO approaches this, the effect of wind on generating units may play a large part in how a Generator Cold Weather Constraint may be declared. GOs should consider that wind concurrent with cold temperatures will decrease the amount of time for a unit's equipment (e.g., sensing lines, hydraulics) to reach the ambient temperature. While this may not be readily apparent in all cases, operational history of operating at a certain temperature may not equate (in terms of capability or duration of operation) to operating at that same temperature with a 20 mph (32 km/h) wind speed. Providing freeze protection measures, such as tarps or temporary wind block structures, may support the ability to operate longer during extreme cold weather. Each of these three probabilistically infrequent conditions (the ECWT, a steady 20 mph (32 km/h) wind, and a duration of 12 continuous hours at these conditions) is, in and of itself, conservative. When they have their effects combined, it results in a requirement that will significantly contribute to BES reliability during extreme cold weather conditions.

In developing Reliability Standard EOP-012-2 and a shorter Implementation Plan to meet the directives of the FERC February 2023 Order, the Project 2021-07 determined to replace "effective date of this requirement" with a date certain, October 1, 2027. In establishing this date, the 2021-07 DT considered the original proposed Implementation Plan for Reliability Standard EOP-012-1 which would have had this requirement effective April 1, 2028, FERC's directives to shorten this plan as it related to existing generation, the need to ensure generation is prepared for cold weather, as well as the fact that new generation coming online prior to October 1, 2027 is likely to be significantly advanced past the design phase when incorporating measures to provide capability in sustained wind conditions would be most

cost effective and reasonable. Reliability Standard EOP-012-2 introduced the option for owners of new generating units to develop a Corrective Action Plan (removed in EOP-012-3 efforts), in the event they could not meet the more stringent requirements for new generation upon entering commercial operation on or after October 1, 2027.

In the June 2024 Order (paragraph 72), FERC directed NERC to modify EOP-012-2 to address Corrective Action Plans for new generating units. The Commission stated that, while it was persuaded by NERC's rationale that there needs to be allowances made for units that are well into their construction phase to complete corrective action plans for elements already designed, it was concerned that Reliability Standard EOP-012-2 did not clearly differentiate between projects in an advanced stage of construction and those in a lesser phase of construction. The Commission found that "generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation." Based on this finding, the Commission directed NERC to revise the EOP-012 standard "to clarify that any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date."

The Project 2024-03 DT considered several options to both address the FERC directive and account for the concern that certain generators may be too far along in the construction phase to make changes to meet the more stringent criteria readily. These options included extending the "grandfathering" date past October 1, 2027 and redefining "commercial operation" to a less specific phrase, such as "in operation". However, the Project 2024-03 DT determined that maintaining the October 1, 2027 date as the "grandfathering" date was important in the interest of raising the bar for reliability in future cold weather seasons. It did not identify any compelling reason to change either that date or the existing measure of "commercial operation" from the previous versions of the standard.

Earlier drafts of the EOP-012-3 standard included different requirements depending on when the generating unit was designed and when it entered commercial operation. It was thought that units that were coming online the first winter of the new requirements (winter 2027-2028), but that were designed prior to June 2023, would be significantly far along in development and construction, and this represented a reasonable demarcation point to allow additional time to implement required capability in accordance with a short -term Corrective Action Plan.

However, comments received during the final comment period indicated several flaws with this approach, including concerns about the potential dates and applicability in non-U.S. jurisdictions. Therefore, this issue is instead addressed in the implementation plan where the scope and applicability can be stated more plainly.

Thus, in the final draft of proposed EOP-012-3 Requirement R2, new generation entering commercial operation on or after October 1, 2027 will either need to: (1) meet the more stringent freeze protection measures called for new generation; or (2) declare a constraint that prevents them from doing so in accordance with Requirement R8. As concerns were raised about requiring Corrective Action Plans of GOs before they may be formally subject to compliance with standards, there is no requirement for GOs to

complete Corrective Action Plans ahead of entering commercial operation in Requirement R2. This is consistent with the underlying intent of the June 2024 Order and more closely resembles the original EOP-012-1 requirements for new generation.

In non-U.S. jurisdictions, entities will use the "grandfathering" date established by the Applicable Governmental Authority, if that is not October 1, 2027.

Rationale for Phased-in Compliance Date for Requirement R2 in Implementation Plan

As noted above, a concern was identified in earlier phases of the development of EOP-012-3 regarding how to account for new generating units that may be too far along in their construction phase to readily implement corrective action plans prior to entering commercial operation the first winter season those requirements would be in effect in the United States (winter 2027-2028).

Under the Implementation Plan, GOs of certain new generating units would have the option to enter commercial operation and have additional time to comply with the more stringent requirements of R2, if a constraint would not apply. For this phased-in compliance date to apply, the GO must have first contractually committed to the design criteria for the unit before June 29, 2023, and the unit must first enter commercial operation between October 1, 2027 and March 31, 2028 (inclusive of the start and end dates). This reflects consideration of NERC's original proposed effective date of EOP-012-1 requirements for new generation.[9]

The June 29, 2023 date, included in the Implementation Plan, represents the date by which the Project 2024-03 DT concluded that GOs would have had reasonable certainty regarding the freeze protection requirements for new generation under the EOP-012 standard and should have begun including them in their design criteria for new generating units. FERC issued its order approving EOP-012-1 and the definition of Extreme Cold Weather Temperature in February 2023; however, the Project 2024-03 DT considered comments stating that there was still some regulatory uncertainty past this time, as several entities had filed for rehearing on various aspects of the standard. On June 29, 2023, FERC issued an order addressing arguments raised on rehearing, resolving any remaining uncertainty regarding the standard to which new generation would be expected to perform in the future (see FERC decision).

It is important to note that this is simply an additional *option* for such GO, intended to enable them to enter commercial operation sooner and begin supplying needed power to the grid faster than if they were required to delay their commercial operation dates to provide the required capability.

In summary, the implementation plan for Requirement R2 specifies that, for certain entities that undertook efforts to finalize their designs before June 29, 2023 before the scope of new requirements became clear, those entities do not have to achieve the required capability during their first winter in

9 Under NERC's original proposed implementation plan for EOP-012-1, this requirement for new generation would have become effective April 1, 2028. In its February 2023 Order, FERC directed NERC to modify the proposed EOP-012-1 implementation plan to reflect the urgency of the need to implement the standard, including to shorten the 60-month implementation plan for existing generating units. Reliability Standard EOP-012-2 shortened these dates and established October 1, 2027 as the "grandfathering" date for new generation.

commercial operation, and instead have until April 1, 2028. (If a constraint is applicable, the entity must submit that constraint within 15 days of entering commercial operation). Entities would be expected to demonstrate that they are eligible to use the phased-in timeline, such as through dated contracts showing that it contractually committed to design criteria for the unit in question before that time. It was considered that entities would generally retain such contracts for their units under construction in the normal course of business and this would impose no additional burden.

For all new generating units entering commercial operation on or after October 1, 2027 that do not meet the above exception, those units must either implement the more stringent capability required in Requirement R2 by their commercial operation date or declare a Generator Cold Weather Constraint. **It is recognized that such generating units may need to delay their originally planned commercial operation date if they do not have the required capability and a Generator Cold Weather Constraint would not apply**. *See* June 2024 Order at P 72.

Rationale for Requirement R3

The 2021-07 Drafting Team created a requirement for existing generating units, as defined in Requirement R3, to be able to operate at their ECWT. Many existing generating units have already demonstrated this capability. An early FERC order on EOP-012-1 rejected a one-hour timing requirement, consequently the 2021-07 DT chose to forego any specific time requirement in Requirement R3. If a generating unit cannot meet the requirements of Requirement R3, it is required to develop a CAP to add new freeze protection measures or modify existing freeze protection measures to be capable of operations at the ECWT (as calculated in Requirement 1).

Rationale for Requirement R4

General Considerations

Requirement R4 requires GOs to develop and maintain cold weather preparedness plans for their unit(s) and describes the information and documentation required in such plans. It is an expansion of the cold weather preparedness plan required under Requirement R7 of EOP-011-2 and is intended to be used and reviewed regularly by the GO. Originally, Requirement R4 Part 4.5 required the GO to annually inspect and perform necessary maintenance of freeze protection measures. The 2024-03 DT added some clarifying language to ensure that annual inspection and maintenance of freeze protection measures is applied specifically to Generator Cold Weather Critical Components. While other freeze protection measures may be applied to equipment by the GO, the freeze protection measures included in the cold weather preparedness plan with annual inspections and maintenance are expected to be those applied to Generator Cold Weather Critical Components. Working in concert with other parts of EOP-012-3, including but not limited to Requirements R1, R5, R6, and R7, the substantive elements of the cold weather preparedness plan will be subject to review requirements, updated as necessary, and the responsible party (GO or GOP) is required to annually train personnel on the cold weather preparedness plan requirements.

Requirement R4 Part 4.1

In Requirement R4 Part 4.1, the GO is required to include in the cold weather preparedness plan the lowest ECWT, as calculated pursuant to Requirement R1, for each unit using reliable source(s) of data. The 2021-07 DT believed that the GO is in the best position to select the most representative weather information relative to its generating unit. The cold weather preparedness plan will be updated if a new lower ECWT is calculated under the Requirement R1 periodic review language.

Requirement R4 Part 4.2

Requirement R4 Part 4.2 is intended to capture, within the cold weather preparedness plan, the information being developed pursuant to Requirement R1 Part 1.2, which is carried over from the previously approved EOP-011 Standard and requires the GO to document several cold weather performance parameters for the unit. This information is valuable, and in some cases, must be shared with other entities consistent with the data specification requirements contained in TOP-003 and IRO-010. A requirement for the GO to document this information within the cold weather preparedness plan ensures the information is readily available and documented when the GO responds to a data specification. It should be noted that if a Corrective Action Plan extension request is approved, the underlying generator cold weather data, as called out in Requirement R1 Part 1.2, should be correctly identified by the GO and provided to the RCs, BAs, and TOPs as requested. The June 2024 Order mentions this in Paragraph 3. The 2024-03 DT believes that the data specification Reliability Standards applicable to RCs, BAs, and TOPs (e.g., IRO-010 and TOP-003) require the entities to request the information and the GO is therefore obligated to provide the most current version of the relevant information within a Corrective Action Plan. The 2024-03 DT did not believe a notification Requirement was needed in EOP-012-3 in addition to those already existing in the data specification Reliability Standards. The 2024-03 DT encourages parties to work together to ensure the most accurate and up-to-date information is provided, especially when conditions increase risk to reliable operations. See the Technical Rationale for Requirement R1 for substantive rationale regarding the operating limitations and generating unit minimum temperatures documented in the cold weather preparedness plan.

Requirement R4 Part 4.3

In Requirement R4 Part 4.3, the GO identifies the Generator Cold Weather Critical Components to help inform their decision on where to implement appropriate freeze protection measures. The NERC *Reliability Guideline, Generating Unit Winter Weather Readiness – Current Industry Practices*[10], presents a suggested list of components that GOs may choose to utilize when developing their own Generator Cold Weather Critical Component inventory. The GO shall develop and maintain a list of Generator Cold Weather Critical Components for each unit.

Requirement R4 Part 4.4

Requirement R4 Part 4.4 requires GOs to document the freeze protection measures implemented on Generator Cold Weather Critical Components. These freeze protection measures should include those to reduce the cooling effects of wind. Requirement R4 does not require GOs to install new freeze protection measures to reduce the cooling effects of wind, but rather to identify freeze protection measures for

Generator Cold Weather Critical Components that will protect against heat loss and the effect of freezing precipitation, where applicable, and document those measures (e.g., water-resistant insulation, protective shielding, insulated boxes, etc.). These measures could include temporary measures as well, such as wind breaks, but there is no expectation for entities to list all climate-controlled areas as freeze protection measures. Specifically, the freeze protection measures applied to Generator Cold Weather Critical Components must be captured in the cold weather preparedness plan.

Requirement R4 Part 4.5

Requirement R4 Part 4.5 is largely carried over from the previously approved EOP-011 Standard and requires annual inspection and maintenance of the freeze protection measures applied to Generator Cold Weather Critical Components identified in the cold weather preparedness plan. The 2024-03 DT added clarifying language to emphasize the need to effectively mitigate risk on the Generator Cold Weather Critical Components. This Requirement ensures these freeze protection measures will be ready and serviceable when needed.

Rationale for Requirement R5

The 2024-03 DT noted that there could be a combination of operations and maintenance personnel that require training, so minor adjustments were made to that extent. Additionally, the personnel may not be physically located at the generator site depending on how an entity implements their cold weather preparedness plan(s).

Rationale for Requirement R6

Key Recommendation 1d: To require Generator Owners that experience outages, failures to start, or derates due to freezing to review the generating unit's outage, failure to start, or derate and develop and implement a corrective action plan (CAP) for the identified equipment and evaluate whether the CAP applies to similar equipment for its other generating units. Based on the evaluation, the Generator Owner will either revise its cold weather preparedness plan to apply the CAP to the similar equipment or explain in a declaration (a) why no revisions to the cold weather preparedness plan are appropriate, and (b) that no further corrective actions will be taken. The standard drafting team should specify the specific timing for the CAP to be developed and implemented after the outage, derate, or failure to start, but the CAP should be developed as quickly as possible and be completed by no later than the beginning of the next winter season.

The Key Recommendation from the Joint Inquiry Report recommended a Reliability Standard that requires GOs to develop a Corrective Action Plan for generating units that experience outages, failures to starts, or derates due to freezing. The Joint Inquiry Report identifies that most of the outages and derates in the February 2021 event were due to freezing of instrumentation, transmitters, sensing lines, or wind turbine blades (p 166 in the Joint Inquiry Report). As such, the 2021-07 DT followed the Joint Inquiry Report recommendation to require a Corrective Action Plan when the apparent cause of the event is freezing.

The 2021-07 DT developed parameters around these events to clarify a reasonable baseline of what level of derate qualified as an event and provide additional language to identify what constitutes a start-up failure. With the additional clarifications, the 2021-07 DT determined that the Reliability Standard would benefit from a defined term, to clearly and efficiently state what constitutes an event. The result was a defined term, Generator Cold Weather Reliability Event, that describes the circumstances for which a Corrective Action Plan is required (i.e., when a freezing event affects the equipment within the control of the GO). The defined term made the Reliability Standard easier to understand and implement by providing clear and reasonable factors to determine whether the impact of an event requires mitigation. However, because of the June 2024 Order, the 2024-03 DT updated Requirement R6 to provide clearer timeline obligations for those units that suffer a Cold Weather Reliability Event. In general, the 2024-03 DT understands that if a Generator Cold Weather Reliability Event occurs, GOs will remediate the issue as soon as possible.

General Considerations for All Corrective Action Plans

To simplify the proposed requirements related to creating a Corrective Action Plan, the 2021-07 DT used the NERC Definition of a Corrective Action Plan. The Corrective Action Plan definition reads "A list of actions and an associated timetable for implementation to remedy a specific problem." As written, the definition requires two parts for a document to qualify as a Corrective Action Plan, i.e., a list of items to be addressed and a timeline for completion. A Corrective Action Plan without both a list of actions and the timeline to implement is not complete. The 2024-03 DT provided additional language for Corrective Action Plans to clarify expectations for those Corrective Action Plans created as a result of a Generator Cold Weather Reliability Event and other Corrective Action Plans referenced throughout the Requirement language. The resulting language kept the underlying structure developed during previous Projects but clarified and added information as needed to meet the June 2024 Order.

The Corrective Action Plan requirement applies to Generator Cold Weather Reliability Events as well as other instances of required actions to support reliable operations within the EOP-012-3 Standard Requirements. It should be noted that nothing in this Standard prevents a GO from taking its own corrective actions resulting from events that do not meet the criteria of a Generator Cold Weather Reliability Event. Startup failure criteria were based on the GADS definition with the removal of "following an outage or reserve shutdown", since the definition of reserve shutdown is different in GADS than it is in some of the Regional Transmission Organizations (RTOs).

Requirement R6 requires the GO to develop, implement, and complete a Corrective Action Plan prior to the first day of December following a Generator Cold Weather Reliability Event. Note that the 2024-03 DT, Standards Committee in the exercise of its responsibility under Section 321 of the NERC Rules of Procedure and NERC staff, considered early occurrences (e.g., September, October, or November) of Generator Cold Weather Reliability Events and provided a footnote to allow remedial activities to be completed by December 1 of the following calendar year. The December 1 date was chosen based on the guidance in the June 2024 Order and the urgency stated within the June 2024 Order regarding this risk. A number of commenters in the final posting suggested that this timeline instead be fixed, such as 12 months, to provide a uniform timeline for implementation regardless of when the event occurred. Such suggestions were considered but declined, as they were not thought to address the risk with the

timeliness identified in the FERC order, and further, corrective actions are likely to be implemented in the fall as part of winter preparations are typically performed or outages for more extensive efforts can be secured.

Requirement R6 would allow GOs to review multiple events holistically following a winter season, if that scenario occurs, and create one Corrective Action Plan for components with common failure causes. Care should be taken when developing a multi-unit or multi-event Corrective Action Plan to ensure it meets the Corrective Action Plan criteria for each unit (e.g., actions and timetables may be different.)

The 2021-07 DT determined that Corrective Action Plans would be required for any freezing event that occurs at temperatures at or above the site's ECWT in accordance with the definition of a Generator Cold Weather Reliability Event. Using the site's ECWT as the threshold, as opposed to the generator unit minimum temperature as determined by the GO, achieves the following:

- Provides a consistent basis for the temperature at which Corrective Action Plans are required for all GOs
- Provides a consistent basis for when Corrective Action Plans are required for all generation types
- Provides a consistent basis for when Corrective Action Plans are required regardless of the level of effort that GOs may have applied to-date winterizing their generators such that they can operate to the ECWT that their sites will reasonably experience
- Removes any incentive (perceived or real) to not further winterize GOs sites to meet the ECWT at the GO site by not providing a window where one site might not be subject to the Corrective Action Plans requirement while sites in the same vicinity experiencing the same temperatures are subject to this requirement
- Removes any disincentive for GOs to design the units to operate well below the ECWT for a site by not requiring them to perform Corrective Action Plans while sites in the same vicinity experiencing the same temperatures are subject to this requirement

The 2024-03 DT provided clarifying language to have Corrective Action Plans developed in response to Generator Cold Weather Reliability Events developed and completed by the first day of December of the winter season following the Generator Cold Weather Reliability Event. Allowances for events which occur in September, October, or November were provided with the expectation that more transient fixes occurring after a Generator Cold Weather Reliability Event would be applied quickly but allowing a reasonable time horizon for compliance with this Requirement (i.e., prior to December 1 of the following calendar year). A Corrective Action Plan triggered by a Generator Cold Weather Reliability Event and for which the apparent cause is the failure of relatively simple existing piece of freeze protection equipment, the scope of the Corrective Action Plan may be documented after the fact. Such prompt repairs may be completed before creation of the Corrective Action Plan, and the GO may complete the implementation of the Corrective Action Plan simply by evaluating the requirements of R6 and documenting how and when the repair work was completed. An example of this circumstance would be a freezing event caused

by a single heat trace circuit failure which would have been sufficient to prevent the event had it not failed.

The June 2024 Order also directed changes affecting the application of a Generator Cold Weather Reliability Event Corrective Action Plans to other units within a GO's fleet. The 2024-03 DT added clarifying language to provide guidance on what the extent of condition (i.e., the review of other generating units) should encompass to help alleviate concerns raised by the industry during the comment and ballot period. Each GO should already know, per Requirement R4, the freeze protection measures on Generator Cold Weather Critical Components. The GOs also have the responsibility, per Requirement R4, to annually maintain and inspect the freeze protection measures on Generator Cold Weather Critical Components. Effectively those Requirements would support quick identification of same or similar equipment susceptible to freezing.

The 2024-03 DT, and later the Standards Committee in the exercise of its responsibility under Section 321 of the NERC Rules of Procedure, established a 12-calendar month window from the time of the originating Generator Cold Weather Reliability Event to complete its fleet-wide review for similar vulnerabilities and develop or update such a Corrective Action plan to address them. In response to multiple stakeholder comments, the Standards Committee provided a 24-calendar to no later than 36-calendar month window (initiated based on the date of the Generator Cold Weather Reliability Event) to implement corrective actions. GOs that complete their fleet-wide reviews sooner than the 12 months allowed would have a longer period of time overall to implement any required corrective actions, incentivizing prompt action to identify the extent of condition across a fleet. While the FERC directive suggesting a potentially longer staggered implementation was considered for more complex implementations, it was determined that developing specific requirements for staggering often presents many logistical challenges, and it may not promote an orderly and efficient implementation depending on the issue needing to be addressed. Allowing up to 36 calendar months total to complete corrective actions would allow GOs with larger fleets to accommodate any required changes. Industry experience with Winter Storms URI and Elliott suggests that the timelines are sufficient in general to mitigate reliability risks. However, a Corrective Action Plan extension may be requested if a particularly complex implementation issue arises requiring longer time to implement.

Entities should evaluate the issue with the freeze protection measure that may have initiated the Generator Cold Weather Reliability Event to see if the maintenance and inspection efforts need to be adjusted (at the unit that suffered the Generator Cold Weather Reliability Event as well as at other similar units with similar freeze protection measures applied to Generator Cold Weather Critical Component(s)).

The existence of a Corrective Action Plan should not discourage the GO from applying any other actions necessary and feasible to prepare a unit to perform at extreme cold weather temperatures during the Corrective Action Plan implementation period.

The 2024-03 DT also created language that allows for Corrective Action Plan extension requests using the NERC Process. ERO Enterprise staff developed the NERC Process that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule). While

TPL-007 has not been utilized extensively, the NERC Process is flexible enough to manage the expected submittals. The DT is not in control of updates to the NERC Process but the NERC staff have been engaged and responsive to industry concerns noted during the Standard development timeline. The NERC Process will allow a thorough review in a timely manner for any Corrective Action Plan extension requests including those that go beyond the 24 or 48 calendar month timetables. While there may be actions impacting the implementation and completion of Corrective Action Plans beyond the control of GOs (e.g., supply chain issues), the GOs should accelerate completion of corrective actions as much as possible to support reliable operations.

The 2024-03 DT updated language regarding Generator Cold Weather Constraints to clarify expectations. Please review Requirements R8 and R9 and Attachment 1 for further discussions of Generator Cold Weather Constraints.

In carrying out its responsibilities under Section 321 of the NERC Rules of Procedure, the Standards Committee determined to carry forward the general framework developed by the Project 2024-03 DT, with some modifications. First, to address stakeholder concerns about the lack of a clear deadline for implementing Corrective Action Plans, the Standards Committee added a deadline to develop Corrective Action Plans for units experiencing the Generator Cold Weather Reliability Event. This deadline would be the same as the date any required Corrective Action Plans for the units must be completed – by the first day of the first December following the event (or for September, October, and November events, the first day of the first December of the following calendar year). By adding this deadline, the Standards Committee intends to add clarity as to the latest date by which such Corrective Action Plans must be developed, while recognizing that the main reliability benefit will come from completing the corrective actions in an expeditious manner. As Corrective Action Plans contain important information to document causes and corrective actions that may inform future winter operations, there is still a reliability benefit to develop these Corrective Action Plans, even if any corrective actions in the Corrective Action Plan are completed in short order.

Rationale for Requirement R7

In EOP-012-2, R7 was expanded from EOP-012-1 to provide additional definition on the requirements to implement a Corrective Action Plan, and to meet the direction for this requirement set by the February 2023 FERC Order. One such direction was to define expectations on implementation timelines for Corrective Action Plans. Under EOP-012-2 R7, Corrective Action Plans were divided into two categories: 1) those which address existing freeze protection measure(s), and 2) those which require new equipment or freeze protection measure(s). The former category required completion of the Corrective Action Plan to remedy the cause(s) within 24 months, and the latter required completion of the Corrective Action Plan within 48 months. The 2021-07 DT modeled this timeline structure after similar Corrective Action Plan implementation requirements in TPL-007. These are maximum durations and entities are expected to work diligently to correct issues and take prompt actions to mitigate future issues as soon as practical. At the same time, the 2021-07 DT recognized that the following time-consuming activities make the 24 and 48 calendar months maximum timelines reasonable: scoping applicability to similar units, freeze

protection engineering and design, project development, budgeting processes, material supply lead times, outage scheduling, skilled labor availability, and startup/commissioning. However, the June 2024 Order established directives to clarify timelines and responsibilities associated with Corrective Action Plans. The 2024-03 DT chose to specifically remove Corrective Action Plan obligations for Generator Cold Weather Reliability Events and place those in Requirement R6. For Requirement 7, the 2024-03 DT provided clarifying language regarding existing and new freeze protection measures and the associated completion timelines. Language was provided for Corrective Action Plans that may include changes to existing freeze protection measures and addition of new freeze protection measures to help clarify expectations for completing the corrective actions. The Project 2024-03 DT discussed the adjectives "new" and "existing" freeze protection measures as it is used within the Requirements. If there is the failure of a freeze protection measure (e.g., heat trace) and that freeze protection measure is replaced with the same/similar/commonly used technology that is considered "existing". The change of a heat trace from 40 foot to 60 foot or change in the amperage capability of the heat trace is not a "new" freeze protection measure. A change in lightbulb wattage in an enclosure should not be considered "new". The industry did provide some examples of "new" freeze protection measures (i.e., new permanent structures or new technologies not already applied) that may take longer to implement depending upon the nature of the freeze protection measure. A wind block made of tarps and a wooden or steel frame should not be considered "new" and require 48 months to implement even if the site did not have a wind block already. Care should be exercised by GOs in the use of "new" and "existing" freeze protection measures and the resulting Corrective Action Plan timelines. Industry experience with Winter Storms URI and Elliott suggests that the shorter timelines are sufficient in general to mitigate reliability risks. Entities are expected to work diligently to correct issues and take prompt actions to mitigate future recurrence. The 2024-03 DT updated Parts 7.1.3. and 7.1.4 for completeness to ensure updates would be made to document needed changes to the cold weather preparedness plan(s) to eliminate recurrence of issue(s) identified in the Corrective Action Plan. In clarifying these timeframes, the 2024-03 DT considered the FERC directives.

Within the revised Requirement R7, the GO is required to implement the Corrective Action Plan within a timetable defined by the GO in the Corrective Action Plan but limited by maximum durations in Part 7.1. If the GO is unable to complete the Corrective Action Plan within the time limits in Part 7.1 the GO is required to request an extension for the Corrective Action Plan with justification per Part 7.2. GOs that are unable to complete the Corrective Action Plan without an extension or if an extension does not support implementation of a freeze protection measure are required under Part 7.3 to create a declaration of the Generator Cold Weather Constraint which shall be provided to the Compliance Enforcement Authority per Requirement R8. Further requirements for the Generator Cold Weather Constraints are provided under Requirements R8 and R9.

The 2024-03 DT also created language that allows for Corrective Action Plan extension requests using the NERC Process. ERO Enterprise staff developed the NERC Process that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule). The NERC Process will allow a thorough review in a timely manner for any Corrective Action Plan extension requests including those that go beyond the 24 or 48 calendar months. The 2024-03 DT utilized the

precedent set by TPL-007 to ensure the unique circumstances of each request will be considered while also avoiding potential compliance burdens which may not have a corresponding reliability benefit (e.g. specific timelines for submission and approval of extension requests). While there may be actions impacting the implementation and completion of Corrective Action Plans beyond the control of GOs (e.g., supply chain issues), the GOs should accelerate completion of corrective actions as much as possible to support reliable operations. It is expected that extension requests will be limited in nature. GOs will have to provide clear justifications with supporting materials within the extension request. Due diligence in ordering equipment, obtaining permits, etc., will be considered as part of the determination of whether a particular set of facts constitute circumstances beyond the control of the entity. Denials of extension requests will be minimized if GOs work diligently to correct issues and take prompt actions. Denial of an extension means the initial timelines for corrective actions must be met. As a result of comments received during the ROP 321 comment period, NERC staff updated the NERC Process. Several entities submitted comments emphasizing the need for consistency and transparency in Generator Cold Weather Constraint evaluations across the ERO Enterprise, or offering suggestions to improve the appeal process. These comments were shared with NERC Compliance Monitoring and Enforcement Program staff during the ROP 321 comment evaluation. NERC agreed that ensuring consistency and transparency in these determinations will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process to provide additional information on how this will be accomplished. NERC staff informed the Standards Committee that the ERO Enterprise is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of Generator Cold Weather Constraints that are and are not being validated. Guidance will include the types of documentation that would be most helpful to the entity and the ERO Enterprise to making these determinations in a timely manner.

The 2024-03 DT updated language regarding Generator Cold Weather Constraints to clarify expectations. Please review Requirements R8 and R9 for further discussions of Generator Cold Weather Constraints.

If one or more actions within a Corrective Action Plan fall under a Generator Cold Weather Constraint declaration, it is the intent of the DT that only those Generator Cold Weather Constraint affected actions would not be implemented as part of the Corrective Action Plan. The remaining corrective actions should be implemented per the timelines provided unless dependent upon the corrective action triggering the Generator Cold Weather Constraint declaration.

Rationale for Requirement R8

In the February 2023 FERC Order, the Commission expressed concern that a GO may make a Generator Cold Weather Constraint declaration without informing planning and operational entities (e.g., the BA) that are expecting the reliable operation of the generating unit to its ECWT. An additional concern was that the Generator Cold Weather Constraint declarations may be used by a functional entity as an opt-out of compliance with requirements set forth in the standards or in a corrective action plan. To mitigate the concern, the Commission directed NERC to work with Commission staff and submit a data collection and assessment plan that contains information related to GO constraint declarations and explanations

thereof. The 2021-07 DT expected that ERO Enterprise compliance staff will be responsible for reviewing declared Generator Cold Weather Constraints and assessing compliance with the Generator Cold Weather Constraint definition criteria in accordance with established processes. The June 2024 Order directives included more direct language that required NERC to receive, review, evaluate, and confirm the validity of each Generator Cold Weather Constraint in a timely manner. Additionally, the June 2024 Order directives required an increase in the frequency of reviews of Generator Cold Weather Constraints.

Matters regarding the specifics of such reviews are addressed in the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process, which is maintained separately from the standard as a compliance process. If a Corrective Action Plan extension request is denied by the CEA, then the GO may request a joint CEA/NERC review of the denial. The time to request a joint review was extended in the NERC Process based on comments received during the ROP 321 comment period.

The 2024-03 DT updated Requirement R8 to require the GO to submit, to the Compliance Enforcement Authority, a Generator Cold Weather Constraint in accordance with Attachment 1 under specific timelines. The ERO Enterprise staff have developed the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule) as a foundation for the Generator Cold Weather Constraint process. The NERC Process will allow a thorough review in a timely manner for any Generator Cold Weather Constraint submitted. The 2024-03 DT created Attachment 1 to provide clear expectations on Generator Cold Weather Constraint conditions. Attachment 1 contains some known Generator Cold Weather Constraint conditions as well as examples of other case-by-case Generator Cold Weather Constraint conditions that may also be considered valid. To be clear, all Generator Cold Weather Constraint declarations require submittal per the NERC Process. The 2024-03 DT could not create an exhaustive list of Generator Cold Weather Constraint conditions but provided language that allows professional judgement to be utilized. The 2024-03 DT believes the NERC Process in conjunction with Requirement R8 and Attachment 1 effectively meets the FERC directive regarding receiving, reviewing, evaluating, and confirming the validity of Generator Cold Weather Constraints.

To address concerns about potential administrative burdens associated with repeated, known issues at generating unit(s) with a valid Generator Cold Weather Constraint, the Project 2024-03 DT developed Part 8.4. Part 8.4 provides that, in such a case, the GO will provide notice to the CEA. This helps maintain visibility over known reliability issues while reducing the administrative burdens associated with repeating requirements in this case.

The 2021-07 DT believed that Generator Cold Weather Constraint declarations would be the exception, but it is clear to the 2024-03 DT that certain conditions may exist (based on general weather patterns) that will increase the amount of Generator Cold Weather Constraint declarations and subsequent submittals. In anticipation of that scenario, and following the June 2024 Order, the 2024-03 DT considers the NERC Process a valuable tool to capture data that may help future understanding of the effectiveness of the ECWT. The February 2023 FERC Order and subsequent NERC filing require the collection of data to evaluate the effectiveness of the EOP-012-3 Reliability Standard.

Updated Generator Cold Weather Constraint declarations would also require an update to the operating limitations provided via data specifications to the entities overseeing reliability (e.g., BA, TOP, or RC). In this manner, information relevant to valid Generator Cold Weather Constraint declarations are made available to the planning and operational entities pursuant to their data collection authority contained in TOP-003 and IRO-010. BAs, RCs, and TOPs should ensure complete coverage and timeliness of cold weather-related data submission within their data specifications especially during local forecasted cold weather.

Rationale for Requirement R9

Based on multiple comments regarding Requirement R8, the FERC directive regarding periodicity of reviews, and what a GO should do if a Generator Cold Weather Constraint is determined to be no longer valid, the 2024-03 DT developed a separate new Requirement R9.

Initially EOP-012-1 required an annual review of Generator Cold Weather Constraints. That frequency of reviews was subsequently changed to five calendar years in EOP-012-2. The June 2024 Order directed that the review frequency be increased from the five-year periodicity. While GOs should perform a review and update any Generator Cold Weather Constraint declarations as needed, the 2024-03 DT has developed language requiring a review of validated Generator Cold Weather Constraints every 36 calendar months.

Initially, the Project 2024-03 proposed that reviews be conducted every 24 calendar months. There were multiple concerns raised about the 24 calendar month periodicity. Based on consideration of these concerns, the 2024-03 DT chose, and the Standards Committee, in carrying out its responsibilities under Section 321 of the NERC Rules of Procedure, determined to carry forward the decision, to extend it to 36 calendar months. Reliability Standard CIP-014, a Reliability Standard addressing another significant risk, is proposing a review every 36 calendar months. Based on information shared at the Technical Conference held on November 12, 2024, changes to some technologies that may affect Generator Cold Weather Constraints may take a significant amount of time (well in excess of 36 months) to become available. By shortening from the five calendar years, the 36 calendar month timeline provides a reasonable approach to meeting the Commission's directives without creating undue administrative burden to periodically monitor if Generator Cold Weather Constraints remain valid or if new technologies have become available that effectively obviate the originally validated Generator Cold Weather Constraint.

Part 9.1 addresses what a GO must do if it finds that a declared Generator Cold Weather Constraint is no longer valid. For example, a new technology exists that would address the freezing issue, and no other Generator Cold Weather Constraint criteria would apply. In that case, the GO must develop a Corrective Action Plan or update an existing Corrective Action Plan (if applicable), in accordance with the requirements for Corrective Action Plans in Requirement R7. This would include timetables specifying completion of the corrective actions in accordance with that requirement.

Attachment 1

In the development of Attachment 1, the 2024-03 DT started with a list of Generator Cold Weather Constraint examples developed by the 2021-07 DT in the EOP-012-2 Technical Rationale. The foundational scenarios were presented in a way that were supportive of efforts but based on comments received the 2024-03 DT felt inclusion in the Standard to be a more effective way of memorializing the scenarios. The 2024-03 DT chose to utilize a limited and discrete list of known Generator Cold Weather Constraints as well as a description of other case-by-case situational descriptions that may constitute Generator Cold Weather Constraints. All declared Generator Cold Weather Constraints must be confirmed as valid by the Compliance Enforcement Authority. Nevertheless, the limited and discrete list is intended to describe specific circumstances that, if met, would have a very high probability of being approved. The 2024-03 DT discussed providing clarity with examples (as noted by FERC Order Paragraph 47) knowing that additional instances or conditions that may be considered a Generator Cold Weather Constraint may exist.
Per the FERC Order, NERC staff are responsible to provide a process describing the receipt, evaluation, approval (as needed), and validation of Generator Cold Weather Constraints. This process is captured in the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") document.

Once a declaration is approved by the CEA it is considered valid. Changes to valid Generator Cold Weather Constraints must be re-submitted to the CEA to remain valid. Regardless of a Generator Cold Weather Constraint being of the "known" type, a GO is still required to submit known Generator Cold Weather Constraints for approval. There were some comments received during the ROP 321 comment period that suggested automatic or limited review of "known" Generator Cold Weather Constraints. No changes were made to the Standrad or the NERC Process as those did not support directives within the June 2024 Order.

The 2024-03 DT is intentionally leaving room for additional instances of Generator Cold Weather Constraints to be presented as it would be impossible to foresee every potential set of circumstances that could possibly constitute a constraint. Several conversations occurred during public meetings that were captured within Attachment 1. The determination to include specific examples of Generator Cold Weather Constraints really depended upon industry interaction on what prevalent and reasonable issues were being presented. Some issues, such as voiding equipment warranties, may initially be considered case-by-case until such time there are clear indications from the industry (or OEMs) that application of a specific freeze protection measure would violate a warranty. No specific examples were provided by industry to label voiding a warranty as a known Generator Cold Weather Constraint. Furthermore, the 2024-03 DT wants to ensure that the Standard language supports the development and adoption of new freeze protection measures, practices, methods, or technologies while not immediately requiring that the new freeze protection measures, practices, methods, or technologies be implemented industry-wide. The 2024-03 DT encourages additional study and implementation of freeze protection measures to remove Generator Cold Weather Constraints, as appropriate, over time.

The 2024-03 DT updated the definition of Generator Cold Weather Constraints to provide clarity as directed by FERC. Additional updates to the definition were provided based on comments received during the ROP 321 comment period. In addition to modifying the definition, the 2024-03 DT developed Attachment 1 which was updated during the ROP 321 comment period. Requirement R8 provides entities a clear understanding of what is expected when managing Generator Cold Weather Constraints and directly references use of Attachment 1. The DT broadly categorized Generator Cold Weather Constraints into two types; known and those that would be determined on a case-by-case basis.

The first of the known Generator Cold Weather Constraints, addressing low temperature operability of wind turbine towers, was debated at length in the 2024-03 DT meetings. Discussion among the Drafting Team, observers, and in the Technical Conference indicated a typical limit of -22°F for operation of wind turbines. This typical limit may apply specifically to heated areas or equipment within the nacelle and not be associated with other known ductile-to-brittle transition temperatures for specific mild steel alloys used in turbine towers. Nevertheless, unless a tower is constructed of Austenitic stainless steel or other face-centered cubic atomic structure materials, such a transition temperature generally will exist. The dynamic stresses of operating the wind turbine below such transition temperatures could imperil the structure itself. Anecdotally, it was noted that this limit would cause this Constraint to apply to a portion of the north-central United States and central Canada. It was broadly recognized that the standard needs to recognize and allow this limitation for existing wind turbine tower equipment, and the DT sought to determine an appropriate date beyond which it should be expected that industry can meet low temperature operating capability. Ultimately, October 1, 2029 was established as the manufacturing limit date for compliance of new wind turbine towers. This was determined based on an accelerated interpretation of general feedback from the 2024-03 Technical Conference indicating that generational technological development cycles in the industry are on the order of 5-7 years. The October 1, 2029 date would allow four years beyond the anticipated implementation date of EOP-012-3 (October 1, 2025) for manufacturers to select, apply, test, and begin production of wind turbine towers constructed of materials capable of lower temperature operation appropriate for those locations with Extreme Cold Weather Temperatures below the limits associated with current tower material designs[10]. In addition, the 2024-03 DT also received feedback through industry outreach from participants indicating delivery and construction lead times for wind turbines were years into the future, providing additional support for the selected dates. The language in the Standard also requires those units to enter commercial operation before October 1, 2031, which prevents an entity from simply procuring an abundance of equipment prior to the manufacturing date limit (October 1, 2029) and constructing them over a long period of time in the future. The two-year gap was established to give a reasonable timeframe for entities to receive, construct, and commission the equipment. The DT felt that these dates would appropriately allow projects that are currently in different phases of planning or execution to be completed while also creating end dates beyond which wind turbine towers must be designed and erected to meet all aspects of EOP-012-3 and

[10] The DT also consulted with a representative from a wind OEM with experience in operations in Northern Europe, United States, and Canada, all areas that can experience extremely low temperatures. This representative indicated that there were no wind turbine tower designs in their current and projected future global portfolio that operate at temperatures colder than -30 degrees Celsius (-22 degrees Fahrenheit). The OEM follows IEC 61400-1 Ed 2019 (Chapter 14 Cold Climate)(https://webstore.iec.ch/en/publication/26423) and when operations as low as -30 degrees Celsius is desired, low temperature environmental modification kits are added.

this particular known Generator Cold Weather Constraint would no longer be considered valid. During the ROP 321 comment period there were a few comments regarding the timeframe to consider for wind turbines to meet the lower ECWT. One comment that might be considered in the future was that the wind turbine tower "known" Generator Cold Weather Constraint be changed to October 1, 2035, and October 1, 2037, respectively to better reflect the likely longer duration development cycle for new towers using specialty steel. The Standards Committee in the exercise of its responsibility under Section 321 of the NERC Rules of Procedure did not feel compelled to make the suggested change. The need for urgency reflected in the FERC directives in the June 2024 Order and the nature of the directives supported the decision.
The list for known Generator Cold Weather Constraints included a section devoted to the application of freeze protection measures to meet the Requirements of EOP-012. The Project 2024-03 DT initially had individually listed the scenarios but felt capturing the issues under a single scenario, the application of freeze protection measures, was better suited for the Attachment 1 material. A key to inclusion on the list was reasonableness in light of what may be available to use within the industry. Replacing wind turbine blades solely for the purpose of adding de-icing or ice-minimizing capabilities was not consider a reasonable approach. While the lack of solar-related Generator Cold Weather Constraints received a few comments during the ROP 321 comment period, no industry supplied examples were provided outside the removal of frozen precipitation provided to the Project 2024-03 DT. The Project 2024-03 DT did discuss types or techniques of removal (e.g., tilting panels if applicable, heat applications, or sweepers) and came to an understanding that some suggestions could damage the solar panel itself. Industry could supply case-by-case examples of solar-related Generator Cold Weather Constraints that may be captured in the future. Applying heat upstream of inlet air filters was noted as a particular issue for plants to incorporate. Wind turbine heat tracing or de-icing are in very early stages of use and were considered as known Generator Cold Weather Constraints by the Project 2024-03 DT. No additional comments received during the ROP 321 comment period required changes to the known list.

The case-by-case situations and circumstances that may constitute a Generator Cold Weather Constraint are described separately. The enumerated list in Attachment 1 is not intended to be exhaustive but rather to provide clear descriptions of circumstances that may constitute Generator Cold Weather Constraints depending on the facts and circumstances presented by the GO. Generator Operators bear the burden of defending and supporting their declared constraints while the ERO bears the burden of confirming them as valid, or not. While some comments received during the ROP 321 comment period noted lack of guidance provided in Attachment 1, no substantial changes were provided or discretely requested by industry. The flexibility provided in the case-by-case determinations will allow a GO to reasonably present its facts for consideration of a valid Generator Cold Weather Constraint. NERC staff updated the NERC Process, based on comments received, to support provision of information to the industry on Generator Cold Weather Constraint validation efforts.

The Project 2024-03 DT received a few examples of issues that were incorporated into the case-by-case list. It is not known how pervasive some of the case-by-case Generator Cold Weather Constraints may be in the industry. NERC committed to providing information on what the CEAs may be seeing as validation

of Generator Cold Weather Constraints occur. This may shed some light on what a more pervasive issue may be than one-off cases of Generator Cold Weather Constraints.

While the Project 2024-03 DT supports the idea that voiding an equipment warranty is an approach to applying freeze protection measures that should be avoided, no specific instances were provided to the team. To allow for the possibility that such a condition may exist, the situation was listed in the case-by-case section.
Exceeding a design limitation that would impair or degrade the effective operation of any unit is a situation that should be actively avoided. During the Project 2024-03 public discussions, the idea was brought up a few times but no specific issues were noted. Solar and battery OEMs appear to not include wind speed when determining the temperature range for operations. If issues are discovered with any type of facility, the validation efforts of the CEAs may reveal a trend worth noting to the industry.

Physical limitations for the application of freeze protection measures was discussed by the Project 2024-03 DT with the few examples provided noted in the case-by-case list. The discussions appeared to limit the population for the application of the freeze protection measures but it was important to capture.

The Project 2024-03 DT discussed analysis of freeze protection measures to determine effectiveness. There was concern by the industry that if one Generator Owner applied a particular freeze protection measure that there might be an assumption that it should be applied broadly. Innovation of freeze protection measures should not be stifled by regulatory Requirements nor should there be an assumption that the freeze protection measures will work effectively for every location. To that point the Project 2024-03 DT felt that an analysis was required to support the actions of a Generator Owner. There were a few comments received in the ROP 321 comment period regarding clarity around “generating unit(s) of comparable types in regions that experience similar winter climate conditions.” The Project 2024-03 DT included that phrasing with the understanding that entity’s would be able to clearly demonstrate why a freeze protection measure may not be effective for their unit(s). The Standards Committee in the exercise of its responsibility under Section 321 of the NERC Rules of Procedure did not feel compelled to make any changes to the phrasing. NERC may provide further guidance in the future but entities are encouraged not to over analyze the phrasing in the support of reliable operations.
Among these circumstances, the DT recognized the need to balance potential adverse effects to the Bulk Power System reliability caused by requiring implementation of a freeze protection measure with the beneficial effects of doing the same. Because such circumstances can and do change by location and over time, this weighing process is best done on a localized basis and ideally interactively between the GO and other affected functional entities while broadly considering immediate and potential future impacts of a declared constraint.

“Case-by-Case Determinations of Generator Cold Weather Constraints” 5a and 5b (accelerated premature retirement, cancellation of a planned unit) were revised based on comments received during the ROP 321 comment period. Language to require the Generator Owner to have an attestation signed by an officer

of the company to accompany its determination, made through an analysis, that the constraint applies was added. A company officer is a high-ranking individual within a corporation responsible for managing specific areas of the business. This addition was intended to address a concern about potentially questionable economic constraint declarations being submitted for CEA review. The change is not expected to meaningfully increase the administrative burden for affected Generator Owners seeking to make such a declaration.

Two additional cases seemed particularly well-suited for a threshold for quantification of impacts: those that reduce a generating unit's real or reactive power when the freeze protection measure is not in place and those that would reduce net dependable capacity during summer or at Peak Demand. These two cases are addressed in sections 5.c. and 5.d. of Attachment 1. In them, the DT has selected a value of three (3) percent, reduction as an appropriate level of impact above which the deleterious impact to the Bulk Power System resulting from requiring a specific freeze protection measure may be appropriately determined to outweigh the benefits of applying the measure. Recognizing that local and temporal conditions are best understood, measured and predicted by the GO and affected functional entities, the DT chose to allow flexibility in the selected three percent value when a different value is supported by the appropriate functional entity as more supportive of reliable operation of the grid.

In addition to being a sensible threshold, use of a three (3) percent value has precedent in BAL-002-WECC-3 where it is used as a barometer for reliable operations in terms of Contingency Reserve.

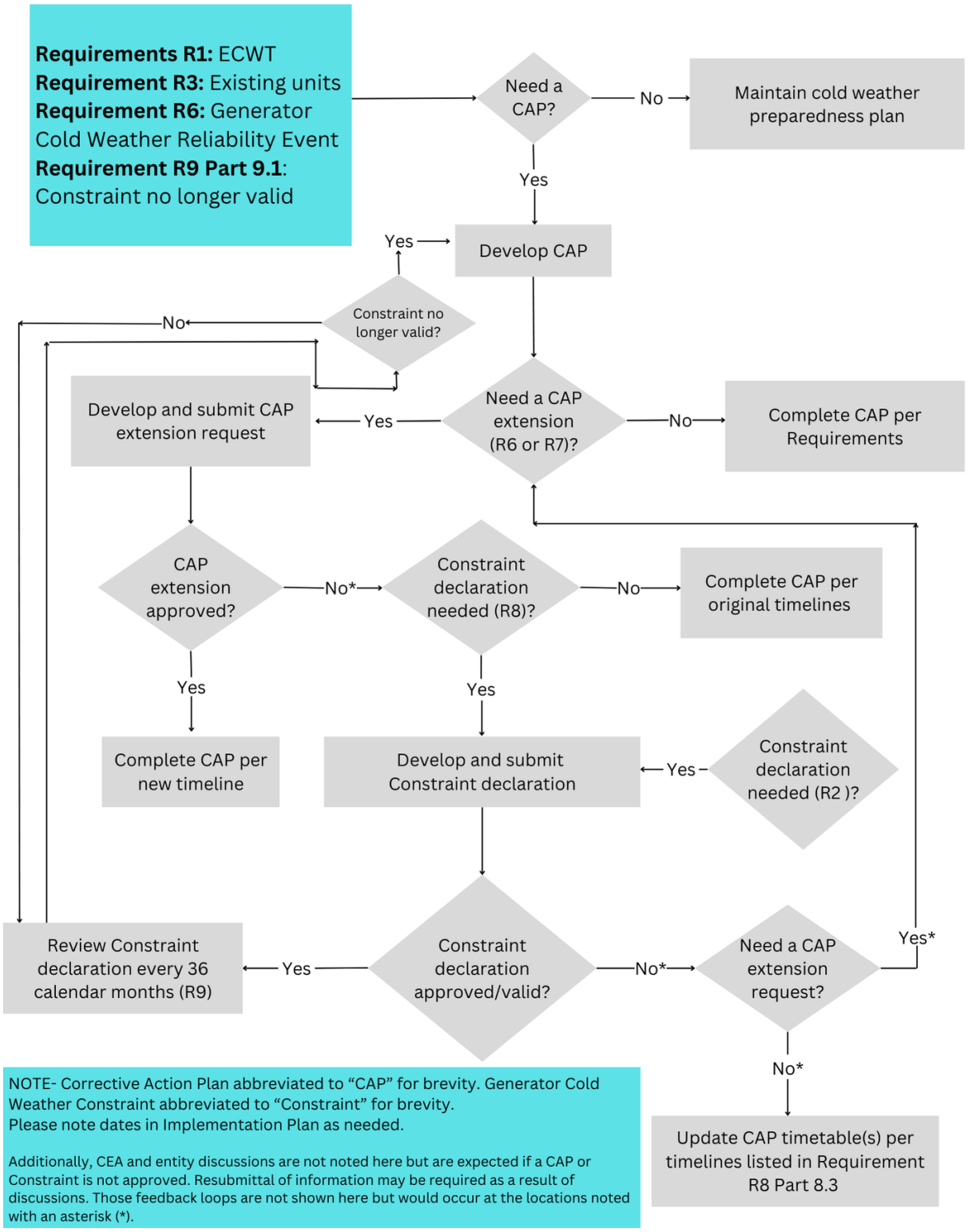
The language provided in both the known and case-by-case portions of Attachment 1 is meant to describe criteria that are objective, unambiguous, and auditable. Guidance on the Generator Cold Weather Constraints could be supported by the industry, NERC, and the Regions through various methods. It is important to work collaboratively to understand the conditions presented and be able to support validation of the Generator Cold Weather Constraints as EOP-012-3 is implemented

In all cases, when submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the GO must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the GO will apply. If a Generator Cold Weather Constraint declaration indicates that the application of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk-Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s), the documentation that defends and supports the constraint could properly include any assessment that the applicable functional entity (e.g., BA or RC) might agree to provide concerning the impact to the reliability of the Bulk-Power System if the constraint were to be deemed invalid by the CEA. Such an assessment, or other means of demonstrating agreement from an appropriate functional entity, would serve to strengthen the Generator Cold Weather Constraint declaration.

It should also be emphasized, as written in Attachment 1, that an approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the GO of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

With all Generator Cold Weather Constraints, it is the responsibility of the GO to provide supporting materials to facilitate approval and validation of the Generator Cold Weather Constraint by the ERO Enterprise. NERC staff has provided that additional guidance will be provided moving forward to support industry efforts in understanding the NERC Process. As mentioned in the Requirement R8 Technical Rational discussion, the NERC Process was developed to support the FERC directives in the June 2024 Order. The 2024-03 DT believes the new definition of Generator Cold Weather Constraint, updated language throughout the Standard with emphasis on Requirement R8, and the contents of Attachment 1 provide significant clarity to industry on what is expected for Generator Cold Weather Constraints to be considered valid.

EOP-012-3 Process Flow Chart: Below is a graphical representation demonstrating the relationship between Requirements:



NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Technical Rationale

Project 2024-03 Revisions to EOP-012-2
Reliability Standard EOP-012-3 | ~~January~~March 2025

EOP-012-3 – Extreme Cold Weather Preparedness and Operations

Introduction

This document explains the technical rationale and justification for the proposed Reliability Standard EOP-012-3. It provides stakeholders and the ERO Enterprise with an understanding of the technology and technical requirements in the Reliability Standard. This Technical Rationale and Justification for EOP-012-3 is not a Reliability Standard and should not be considered mandatory and enforceable.

Background

From February 8 through February 20, 2021, extreme cold weather and precipitation caused large numbers of generating units to experience outages, derates or failures to start, resulting in energy and transmission emergencies (referred to as the "Event"). The total Event firm load shed was the largest controlled firm load shed event in U.S. history and was the third largest in quantity of outaged megawatts (MW) of load after the August 2003 Northeast blackout and the August 1996 West Coast blackout. The Event was most severe from February 15 through February 18, 2021, and it contributed to power outages affecting millions of electricity customers throughout the regions of ERCOT, SPP, and MISO South. Additionally, the February 2021 event is the fourth cold weather event in the past 10 years, which jeopardized Bulk Power System (BPS) reliability. A joint inquiry was conducted to discover reliability-related findings and develop recommendations from Federal Energy Regulatory Commission (FERC), NERC, and Regional Entity staff. The FERC, NERC, and Regional Entity Staff Report about the February 2021 Cold Weather Outages[1] ("Joint Inquiry Report") was published on November 16, 2021.

Project 2021-07 was a two-phase project to address the 10 sub-recommendations in Key Recommendation 1 of the Joint Inquiry Report for new or enhanced NERC Reliability Standards. Reliability Standard EOP-012-1 was originally developed to address Recommendations 1d, 1e, and 1f of the Joint Inquiry Report through new and enhanced requirements for generator preparedness for extreme cold weather conditions. Reliability Standard EOP-012-2 was revised to address Key Recommendations 1a, 1b, and 1c as well as the FERC directives in the February 2023 Order approving the Phase 1 standards EOP-011-3 and EOP-012-1.[2] Reliability Standard EOP-012-3 is being revised to address FERC directives in the June 2024 Order approving EOP-011-4 and EOP-012-2[3].

1 The February 2021 Cold Weather Outages in Texas and the South Central United States | FERC, NERC and Regional Entity Staff Report | Federal
Energy Regulatory Commission
2 *N. Am. Elec. Reliability Corp.*, 182 FERC ¶ 61,094 (2023) (FERC Order), *notice denying reh'g and providing for further consideration*, 183 FERC ¶ 62,034 (2023).
3 *N.AM.Elec.Reliability Corp.*, 187 FERC ¶ 61,204 (FERC Order)

Defined Terms

Previous drafting teams (DTs) developed five defined terms to be added to the NERC Glossary of Terms to make the requirements easier to understand. Project 2024-03 updated the term "Generator Cold Weather Constraint" to meet the FERC directives in the June 2024 Order and provided additional language to clarify issues noted during the development of EOP-012-3, 2024 Small Group Advisory Session(s), and input received during outreach with industry. The five terms are:

Extreme Cold Weather Temperature

The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from 1/1/2000 through the date the temperature is calculated.

The definition of Extreme Cold Weather Temperature (ECWT) was developed by the 2021-07 DT to provide clarity to the Generator Owner (GO) on determining what temperature triggers the requirement obligations. Each GO should select a reliable source of data from a recording location near the plant to determine their ECWT. Sources could include, for example, the National Weather Service (NWS) or National Oceanographic and Atmospheric Administration (NOAA) weather stations, Federal Aviation Administration (FAA) weather stations, or Environment and Climate Change Canada location for Canadian entities[4], etc. NOAA's National Centers for Environmental Information provides Climate Data Online (CDO) as a free resource that includes quality-controlled weather data and 30-year Climate Normals[5]. In general, GOs should use the location nearest the plant, but may select a further location if geographic or local climatic patterns make a further location more representative of the weather at the generating unit. GOs may use on-site weather stations if data, which reasonably matches reliable nearby off-site sources since January 1, 2000, is available. The starting period chosen by the 2021-07 DT to gather data to determine the lowest temperatures that occur near a facility is based on the completion of the modernization of the National Weather Service project known as MAR (Modernization and Associated Restructuring). This project was completed in the year 2000. In general, the National Weather Service modernization provides weather data to be available at most large airports. This will make it fairly accessible for companies to gather data and perform the required analysis. The December through February timeframe was selected to correspond to the meteorological winter, as defined by NOAA.[6]

The 2021-07 DT discussed methods for determining an ECWT with engineering design professionals, and it was determined that it is typical engineering practice to use a statistical approach to determine the design temperature when implementing generation facility freeze protection measures. The 2021-07 DT determined that only winter temperature values (i.e. between December and February) shall be used for the statistical approach and based on analysis of multiple weather data sites. It was determined that by using the lowest 0.2 percentile, there will be sufficient data points to ensure that a single hour at a temperature that may not be accurate, or may be a statistical anomaly, doesn't result in an overly conservative design or preclude the ability of the GO to use historical operating data to prove compliance to the requirements. The 2021-07 DT selected the 0.2 percentile of winter month temperatures since 1/1/2000 to identify a temperature which has been rarely surpassed, but which allows some margin for a

4 Environment and Climate Change Canada - Canada.ca
5 U.S. Climate Normals | National Centers for Environmental Information (NCEI) (noaa.gov)
6 Meteorological Versus Astronomical Seasons | News | National Centers for Environmental Information (NCEI) (noaa.gov)

GO to have previously demonstrated successful operation. The 2021-07 DT considered using the lowest recorded hourly ambient temperature, but upon further review of the historical weather data and generally accepted design principles, determined that the statistical approach to setting the ECWT for a site's location was more reasonable.

The 2024-03 DT recognized comments and concerns raised during the 2024 Small Group Advisory Session on cold weather preparedness regarding application of the ECWT calculation if hourly temperature values were questionable. If complete data sets are not available (e.g., data is corrupt or missing) at a single weather station back to January 1, 2000, the GO should document the methodology they use to determine their ECWT, such as appending data from multiple weather stations or selecting a complete or partial data set from a weather station further away from the facility. The 2021-07 and 2024-03 DTs realized that a complete data set (i.e., all hours of every day of every year for the months of December, January, and February) may not be available due to a variety of technical reasons. To that point, the GO's approach in handling the missing/corrupt data should be documented in their methodology and available to Compliance Monitoring Enforcement Program (CMEP) staff as needed. To accommodate concerns raised by industry, the 2024-03 DT felt additional clarification was needed to address missing data and set an expectation for entities to meet when reviewing the inputs to the ECWT calculations within Requirement R1. Entities should be able to explain the reasoning behind the substitution of missing or corrupt data points.

It has been noted by the industry that there may be the possibility of missing temperature data utilized for the ECWT calculation. The 2024-03 DT discussed data completeness concerns and, after considering the likely variability in such hourly temperature data sets across North America, ultimately chose not to establish a requirement regarding the size of the data set necessary to support an accurate ECWT determination. The 2024-03 DT understands the entity may very well have an overall approach to missing data versus a generating unit-by-unit approach. By the nature of the percentile function, significant data loss may not change the ECWT value. The key is where the data is missing in relationship to the ECWT determined value. Note that compliance obligations when the ECWT is determined near 32 degrees Fahrenheit, tend to dictate the need for a more rigorous level of effort needed to help determine possible impacts of missing temperature data. Missing hourly temperature values above the ECWT has limited impact to the determination. However, missing hourly temperature values below the ECWT can impact the ECWT determination value. For example, the 0.2 percentile of 50,000 hourly values equates to 100 hourly values (in this case the lowest recorded hourly temperatures.) If there are missing hourly values that would have been included in the list of the lowest 100 hourly temperature values, those values should be explained by the entity and may warrant further review. Missing data in the lowest 100 values effectively has the potential of moving the ECWT value higher but that is dependent upon the data set. This simplified example is intended to demonstrate a principle; not establish a fixed number of lowest temperature values of concern. Any data set with missing or invalid hourly temperature values recorded during the coldest periods since January 1, 2000 should be carefully evaluated to ensure that any adjustments utilized on those particular values are properly addressed in a transparent and logical way. Please reference the Calculating Extreme Cold Weather Temperature document drafted by the 2021-07 DT and updated by the 2024-03 DT for an example of how to calculate the ECWT[7].

7 Report (nerc.com)

Generator Cold Weather Critical Component

Any generating unit component or system, or associated Fixed Fuel Supply Component, that is under the Generator Owner's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event. This definition excludes any component or system or associated Fixed Fuel Supply Component located inside a permanent building with a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

The 2021-07 DT felt the best method to address where freeze protection measures should be implemented was to define a term which specifies a subset of components that may be susceptible to freezing and are critical to the operation of generating units. GOs should consider previous freeze-related issues experienced by the generating unit(s), as well as actions taken to mitigate those freeze-related issues, when establishing its list of Cold Weather Critical Components. The 2021-07 DT also felt it is appropriate to specifically exclude components that are not susceptible to freezing due to being inside heated buildings that maintain the interior temperature above freezing.

The 2021-07 DT's intent with regard to the language "that is under the Generator's Owner's control" was to clearly delineate that cold weather events external to the generation site such as loss of fuel supply or loss of auxiliary power to the site that resulted in a Generator Cold Weather Reliability Event (see definition below) would not be subject to this standard. Furthermore, ice buildup on transmission lines and/or high voltage lines between the generating station and point of interconnection with the Transmission Owner would not constitute a freezing condition in the context of this Standard, and therefore, these lines would not be considered a Generator Cold Weather Critical Component.

The 2021-07 DT's intent with the use of the phrase "permanent building" is to refer to a structure that is in place year-round, shall accommodate personnel entry, and has a heating source that regularly maintains the space at a temperature above 32 degrees Fahrenheit for the purpose of protecting components from freezing (e.g. heated container that protects inverter-based resources or battery energy systems). The 2024-03 DT recognized comments and concerns raised during the 2024 Small Group Advisory Session on cold weather preparedness regarding heating of the "permanent building." The HVAC/heating system is not a freeze protection measure in terms of being included in the cold weather preparedness plan as it is not protecting a Generator Cold Weather Critical Component (per the definition) nor is it a Generator Cold Weather Critical Component. The 2024-03 DT expects the HVAC/heating system to be part of routine maintenance and monitoring to ensure that the heated building remains above 32 degrees Fahrenheit.

Fixed Fuel Supply Component

Non-mobile equipment that supports the reliable delivery of fuel to the generating unit and under the control of the Generator Owner at a plant site. Gaseous, liquid, or solid fuel handling components that are installed on site as fixed parts of the fuel delivery system that are under the Generator Owner's control are included. Mobile equipment such as trains, bulldozers, or other equipment that are not fixed in one location are excluded.

The 2021-07 DT wanted to clarify the boundaries of responsibility for the GO as it relates to sites having fuel handling equipment within their control and responsibility to provide freeze protection. The intent of

this definition is to clarify that mobile equipment is not part of this requirement, but permanent fixed equipment impacting fuel delivery needed for generation is included.

Generator Cold Weather Reliability Event

One of the following events for which the apparent cause(s) is due to freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, and freezing rain) on equipment within the Generator Owner's control, and the dry bulb temperature at the time of the event was at or above the Extreme Cold Weather Temperature:

(1) a forced derate of more than 10% of the total capacity of the unit but not less than 20 MWs for longer than four hours in duration;

(2) a start-up failure where the unit fails to synchronize within a specified start-up time; or

(3) a Forced Outage.

Key Recommendation 1d: To require Generator Owners that experience outages, failures to start, or derates due to freezing to review the generating unit's outage, failure to start, or derate and develop and implement a corrective action plan (CAP) for the identified equipment, and evaluate whether the CAP applies to similar equipment for its other generating units. Based on the evaluation, the Generator Owner will either revise its cold weather preparedness plan to apply the CAP to the similar equipment, or explain in a declaration (a) why no revisions to the cold weather preparedness plan are appropriate, and (b) that no further corrective actions will be taken. The standard drafting team should specify the specific timing for the CAP to be developed and implemented after the outage, derate, or failure to start, but the CAP should be developed as quickly as possible, and be completed by no later than the beginning of the next winter season.

The Key Recommendation from the Joint Inquiry Report recommends a Reliability Standard that requires GOs to develop a Corrective Action Plan for generating units that experience outages, failures to starts, or derates due to freezing. The Joint Inquiry Report identifies that most of the outages and derates in the February 2021 event were due to freezing of instrumentation, transmitters, sensing lines, or wind turbine blades (p 166 in the Joint Inquiry Report). As such, the 2021-07 DT followed the Joint Inquiry Report recommendation to require a Corrective Action Plan when the apparent cause of the event is freezing of equipment or impacts of freezing precipitation (e.g., sleet, snow, ice, or freezing rain) on equipment. The 2021-07 DT felt that it was important to clearly call out freezing precipitation as these events were included in the outages and derates that identified as freezing in the Joint Inquiry Report. Furthermore, Key Recommendation 1c of the report requires GOs to account for the effect of precipitation. The 2021-07 DT has developed parameters around these events to clarify a reasonable baseline of what level of derate qualifies as an event, and provide additional language to identify what constitutes a start-up failure. With the additional clarifications, the 2021-07 DT determined that the standard would benefit from a defined term, to clearly and efficiently state what constitutes an event. The result is a new defined term, Generator Cold Weather Reliability Event, that defines the circumstances for which a Corrective Action Plan is required (i.e., when a freezing event affects the equipment within the control of the GO). The defined term will make the standard easier to understand and implement by providing clear and reasonable factors to determine whether the impact of an event requires mitigation. The 2021-07 DT is

using the definition of apparent as defined in the Webster's dictionary as "clear or manifest to the understanding".

Note that the 2024-03 DT provided additional language to alleviate concerns regarding the administrative nature of developing Corrective Action Plans specifically for similar noted issues occurring at one or more locations (e.g., freezing precipitation on wind turbines). Care should be taken if updating existing Corrective Action Plans for additional units especially in terms of effectively capturing the actions and timetables applicable to the additional units.

The Corrective Action Plan requirement applies to any forced outage due to freezing, regardless of duration. Derates, which are short lived (specified as four hours by the 2021-07 DT) or of small capacity impact (specified as less than 20 MW by the 2021-07 DT, which roughly corresponds with the threshold for Bulk Electric System (BES) impacting generation units), are excluded from the Corrective Action Plan requirement to limit the administrative burden to GOs for events that are minimally impacting to the BES. Also excluded are proactive operational actions to limit the potential of forced outages or derates. It should be noted that nothing in this standard prevents a GO from taking its own corrective actions resulting from such events. Startup failures for conventional generation are defined using the Generating Availability Data System (GADS) definition with the removal of "following an outage or reserve shutdown", since reserve shutdown is defined differently by NERC in GADS than it is by some of the Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs). From the GADS data reporting instructions, the startup period for each unit is determined by the operating company. It is unique for each unit and may depend on the condition of the unit at the time of startup (cold, warm, or hot). A typical unit startup occurs in three phases: warm up, synchronization, and ramp up. NERC defines a startup period to begin with the command to start and end when the unit is synchronized. A startup failure begins when a problem, preventing the unit from synchronizing, occurs. The startup failure ends when the unit is synchronized, another startup failure occurs, or the unit enters another permissible state.

The 2021-07 DT determined that Corrective Action Plans will be required for any freezing event that occurs at temperatures above the generator site's ECWT. By using the site's ECWT, as opposed to the generator unit minimum temperature as defined by the GO in Requirement R1 Part 1.2.2 as the threshold, this achieves the following:

- Provides a consistent basis for the temperature at which CAPS are required for all GOs
- Provides a consistent basis for when Corrective Action Plans are required for all generation types
- Provides a consistent basis for when Corrective Action Plans are required regardless of the level of effort that GOs may have applied to-date winterizing their generators such that they can operate to the ECWT that their sites will reasonably experience
- Removes any incentive (perceived or real) to not further winterize GOs generating sites to meet the ECWT at the GO site by not providing a window where one site might not be subject to the Corrective Action Plan requirement while sites in the same vicinity experiencing the same temperatures are subject to this requirement

- Removes any disincentive for GOs to design the units to operate well below the ECWT for a site by not requiring them to perform Corrective Action Plans while sites in the same vicinity experiencing the same temperatures are subject to this requirement

Generator Cold Weather Constraint

Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures ~~include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and~~ are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would be expected to result in improved generating unit performance during cold temperatures.

The 2024-03 DT reviewed the material from the June 2024 Order when determining how best to update the Generator Cold Weather Constraint definition. The 2024-03 DT relied upon industry and FERC guidance as a basis for updating the definition language and the process captured in Attachment 1 of EOP-012-3. The 2024-03 DT also ensured that constraint language would be fully captured within the Standard itself through Attachment 1. Based on comments received during the ROP 321 comment period, additional revisions were made to clarify the scope of freeze protection measures that may be precluded by a constraint (i.e. not just optimum solutions, but other solutions expected to improve performance).

The 2024-03 DT felt that an Attachment that included specific language further explaining Generator Cold Weather Constraints with discrete known Generator Cold Weather Constraints and other case-by-case Generator Cold Weather Constraints meets the FERC (and industry) expectations to provide unambiguous, objective, and auditable language. The 2024-03 DT discussed providing clarity with examples knowing that additional instances or conditions that may be considered a Generator Cold Weather Constraint may exist.

Per the FERC Order, NERC staff are responsible to provide a process describing the receipt, evaluation, approval (as needed), and validation of Generator Cold Weather Constraints. This process is captured in the ~~Generator Cold Weather CAP Extension and Constraint Process~~EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") document.

Attachment 1 contains a non-comprehensive list of known Generator Cold Weather Constraints as well as a list of situations, circumstances, and criteria that may constitute a Generator Cold Weather Constraint. The GO **must** submit all Generator Cold Weather Constraints to the Compliance Enforcement Authority (CEA) for approval, regardless of which category it might fall into.

Once a declaration is approved by the CEA, it is considered valid. It is the GO's responsibility to document, in the Generator Cold Weather Constraint declaration, the circumstances and reasons why the modification needed to address the freeze protection measure(s) is not being implemented. A Generator Cold Weather Constraint declaration, that no further corrective actions will be taken, is expected to be used sparingly.

The 2024-03 DT is intentionally leaving room for additional instances of Generator Cold Weather Constraints as it would be impossible to foresee every potential circumstance that could possibly necessitate a review of potential freeze protection technologies across the breadth of the United States and Canada and the breadth of generating unit types and ages that fall under this Standard. Furthermore, the 2024-03 DT wants to ensure the Standard language supports the adoption of new freeze protection measure practices, methods, or technologies while not immediately requiring a new freeze protection measure practice, method, or technology to be implemented industry-wide when a leading utility pilots a novel approach, as this would be a disincentive to utilities piloting new technologies. The 2024-03 DT encourages additional studying and implementation of freeze protection measures to remove Generator Cold Weather Constraints as appropriate over time.

In the June 2024 Order, there was a directive to change the frequency of Generator Cold Weather Constraint reviews to facilitate consideration of new freeze protection measure technologies to reduce the risk resulting from the need for a Generator Cold Weather Constraint. That change is captured in Requirement R9 discussed later in this Technical Rationale document.

Facilities

After reviewing the reference material and the efforts of the 2021-07 DT, the 2024-03 DT determined that EOP-012-3 should continue to apply to all BES generating units in order to ensure consistency in extreme cold weather preparedness. The Applicability section first defines "generating unit" as a BES resource. The NERC Glossary of Terms provides the foundation for what BES resources are included in the definition (see Inclusions I2 through I4). Additionally, Blackstart Resources are also specifically declared subject to the winterization requirements. Such Blackstart Resources, consistent with the NERC Glossary of Terms, are those units designated in the Transmission Operator's (TOP) restoration plans. Proposed EOP-012-3 clarifies which Facilities and their Generator Cold Weather Critical Components are subject to implementing freeze protection measures through specific language in Requirements R2 and R3. The 2024-03 DT briefly discussed GO Category 2 Inverter-Based Resource (IBR) applicability to EOP-012-3 but it was noted the applicability is under review as part of the Registration of IBR Work Plan so no changes were presented.

Rationale for Requirement R1

The Project 2024-03's Technical Rationale language for Requirement R1 did not substantially change from 2021-07 DT language and, as such, use of DT below is referencing 2021-07 DT. Much of the criteria of R1 is carried over from the previously approved EOP-011 Standard and requires the GO to document several cold weather performance parameters for the unit. This information is valuable~~,~~ and ~~in some cases,~~ must be shared with other entities per their data specifications. For Requirement R1 Part 1.1, the GO is required to calculate the Extreme Cold Weather Temperature (ECWT) for each unit using a reliable source of data (See the supporting document "Calculating Extreme Cold Weather Temperature"). The DT believes that the GO is in the best position to select the most representative weather information relative to its generating unit. The ECWT will be updated if a new lower ECWT is determined under the periodic review requirement of R1. Defining the operating limitations in Requirement R1 Part 1.2.1 will make affected personnel more aware of unit capabilities and constraints as well as systems and practices that may be necessary to ensure reliability in cold weather, particularly when alternative fuels are involved. In addition, the unit minimum temperature identified in Requirement R1 Part 1.2.2 is used to ~~demonstrate~~support demonstrating compliance with Requirement R3 for existing units. The DT chose one hour of historical operating data recognizing there is extremely limited historical operating data available for a unit below their ECWT. This was not to infer the DT expects that existing generation will only reliably operate for one hour during an extreme cold weather event. The information contained within Requirement R1 Part 1.2 is required to be requested by the BAs in TOP-003 to make sure they have the most accurate unit performance information possible for their reliability analysis during the winter season. It is critical, especially if a Corrective Action Plan, extension request for a Corrective Action Plan, or a Generator Cold Weather Constraint declaration is in effect, that the GO keep Requirement R1 Part 1.2 information updated with those entities requiring said information. The 2024-03 DT did not add a notification Requirement to EOP-012-3 as TOP-003 and IRO-010 obligate the applicable entities (Balancing Authority (BA), Reliability Coordinator (RC), and Transmission Operator (TOP)) to have "*Provisions for*

notification of BES generating unit(s) during local forecasted cold weather to include" Requirement R1 Part 1.2 information. BAs, RCs, and TOPs should have already reviewed their data specifications with regards to EOP-012. The flexibility that industry has required in the determination of data specifications were limited by industry approved Standard language regarding cold weather data and attributes. BAs, RCs, and TOPs should ensure complete coverage and timeliness of Requirement R1 Part 1.2 data submission within their data specifications especially during local forecasted cold weather.

It is recognized that the determination of a single unit minimum temperature is of limited value if applied without consideration of the other ambient conditions under which it was determined, that is, wind and precipitation. Consideration of wind and precipitation, along with the minimum temperature, provides a greater understanding of the potential generating unit capability for cold weather resource planning. The Standard requires that the GO include wind and precipitation data with their generating unit minimum temperature data when the data is available. The impact of deviations from this known temperature/wind/precipitation stated point are expected to be evaluated qualitatively. For example, if the historical minimum temperature occurred at low wind and dry conditions, and actual future cold weather event expected conditions are high winds with precipitation, planning personnel will recognize that a specific unit may not achieve the minimum temperature and can arrange for additional resources. The opposite also applies, i.e., if a design minimum temperature assumes some level of wind and precipitation and actual cold weather expectations are for low wind and dry conditions, planning personnel will recognize that there is increased likelihood that a generation resource may continue to be available below its minimum temperature. If no information about wind or precipitation is known, wind and precipitation are assumed to be zero at the minimum temperature until further information is obtained. The 2024-03 DT did provide updated language within the "Defined Terms" section of this Technical Rationale document to capture concerns regarding ECWT data availability.

Rationale for Requirement R2

The Joint Inquiry Report Key Recommendation 1f referenced recommendation 12 of the 2011 report[8] suggesting that consideration should be given to designing all new generation plants and designing modifications to existing plants (unless committed solely for summer peaking purposes) to be able to perform at the lowest recorded ambient temperature for the nearest location for which historical weather data is available.

In developing the original version of the EOP-012 Reliability Standard, Reliability Standard EOP-012-1, the Project 2021-07 DT determined to impose different cold weather capability requirements for new generation compared to existing generation. Consistent with Key Recommendation 1f of the February 2021 Event Report, GOs would be required to design new units to operate to a specified ambient temperature (the ECWT) and weather conditions for the location, accounting for the cooling effects of wind. Due to the difficulty of performing the same level of design analysis on existing generation as on

8 https://www.nerc.com/pa/rrm/ea/February%202011%20Southwest%20Cold%20Weather%20Event/SW_Cold_Weather_Event_Final.pdf

new generation, the high threshold of the ECWT, and the expected availability of historical data to support sustained operations at that ECWT, the Project 2021-07 DT determined to impose less stringent requirements for retrofitting existing generating units. The Project 2021-07 DT initially specified the "effective date of the requirement," which would be determined in accordance with the EOP-012-1 Implementation Plan, as establishing which set of generators would be "grandfathered" and subject to the less stringent requirements, and which generators would be subject to the more stringent requirements for new generation.

The 2021-07 DT chose 12 hours of continuous operation because it is a typical length of the nighttime in winter in most regions of the US and Canada and typically include the hours with the coldest experienced temperatures. The 2021-07 DT was of the opinion that tying the requirement to the 12-hour period would provide a reasonable level of reliability during a cold weather event. The 2021-07 DT chose a concurrent sustained 20 mph wind speed after an evaluation using the wind chill formula developed by the NWS in the United States. Though wind chill temperature is not an exact science, it is widely understood to reflect the **non-linear increased rate of convective heat loss due to air moving at different velocities**. Commonly available charts show wind chill temperatures as a function of actual air temperature at various wind speeds. Approximately 2/3 of the wind chill temperature drop between 0–60 mph is achieved at 20 mph. Using the NWS chart, this holds true for still air temperatures starting at 40ºF and dropping in 20-degree increments to -40°F. Further, 20 mph is a wind speed commonly experienced across the ERO and yet appropriately higher than the approximate average wind speeds in the United States and Canada, 6-12 mph and 8-11 mph respectively. GOs may apply a wind chill calculation in determining their ability to meet the criteria in Requirement R2. It should be noted that solar and battery OEMs provide little guidance on their facilities capability to perform in cold weather and wind combined. Depending on how a GO approaches this, the effect of wind on generating units may play a large part in how a Generator Cold Weather Constraint may be declared. GOs should consider that wind concurrent with cold temperatures will decrease the amount of time for a unit's equipment (e.g., sensing lines, hydraulics) to reach the ambient temperature. While this may not be readily apparent in all cases, operational history of operating at a certain temperature may not equate (in terms of capability or duration of operation) to operating at that same temperature with a 20 mph (32 km/h) wind speed. Providing freeze protection measures, such as tarps or temporary wind block structures, may support the ability to operate longer during extreme cold weather. Each of these three probabilistically infrequent conditions (the ECWT, a steady 20 mph (32 km/h) wind, and a duration of 12 continuous hours at these conditions) is, in and of itself, conservative. When they have their effects combined, it results in a requirement that will significantly contribute to BES reliability during extreme cold weather conditions.

In developing Reliability Standard EOP-012-2 and a shorter Implementation Plan to meet the directives of the FERC February 2023 Order, the Project 2021-07 determined to replace "effective date of this requirement" with a date certain, October 1, 2027. In establishing this date, the 2021-07 DT considered the original proposed Implementation Plan for Reliability Standard EOP-012-1 which would have had this requirement effective April 1, 2028, FERC's directives to shorten this plan as it related to existing generation, the need to ensure generation is prepared for cold weather, as well as the fact that new generation coming online prior to October 1, 2027 is likely to be significantly advanced past the design phase when incorporating measures to provide capability in sustained wind conditions would be most

cost effective and reasonable. Reliability Standard EOP-012-2 introduced the option for owners of new generating units to develop a Corrective Action Plan (removed in EOP-012-3 efforts), in the event they could not meet the more stringent requirements for new generation upon entering commercial operation on or after October 1, 2027.

In the June 2024 Order (paragraph 72), FERC directed NERC to modify EOP-012-2 to address Corrective Action Plans for new generating units. The Commission stated that, while it was persuaded by NERC's rationale that there needs to be allowances made for units that are well into their construction phase to complete corrective action plans for elements already designed, it was concerned that Reliability Standard EOP-012-2 did not clearly differentiate between projects in an advanced stage of construction and those in a lesser phase of construction. The Commission found that "generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation." Based on this finding, the Commission directed NERC to revise the EOP-012 standard "to clarify that any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date."

The Project 2024-03 DT considered several options to both address the FERC directive and account for the concern that certain generators may be too far along in the construction phase to make changes to meet the more stringent criteria readily. These options included extending the "grandfathering" date past October 1, 2027 and redefining "commercial operation" to a less specific phrase, such as "in operation". However, the Project 2024-03 DT determined that maintaining the October 1, 2027 date as the "grandfathering" date was important in the interest of raising the bar for reliability in future cold weather seasons. It did not identify any compelling reason to change either that date or the existing measure of "commercial operation" from the previous versions of the standard.

~~In developing the posted draft of proposed EOP-012-3, the Standards Committee considered the FERC directive and the concern underlying that directive – that EOP-012-2 did not clearly differentiate between projects advanced in construction and those that were not.~~
Earlier drafts of the EOP-012-3 standard included different requirements depending on when the generating unit was designed and when it entered commercial operation. It was thought that units that were coming online the first winter of the new requirements (winter 2027-2028), but that were designed prior to June 2023, would be significantly far along in development and construction, and this represented a reasonable demarcation point ~~for the~~to allow additional time to implement required capability in accordance with a short -term Corrective Action Plan ~~option~~.

However, comments received during the final comment period indicated several flaws with this approach, including concerns about the potential dates and applicability in non-U.S. jurisdictions. Therefore, this issue is instead addressed in the implementation plan where the scope and applicability can be stated more plainly.

~~Under~~Thus, in the final draft of proposed EOP-012-3 Requirement R2, ~~most~~ new generation entering commercial operation on or after October 1, 2027 will either need to: (1) meet the more stringent freeze

protection measures called for new generation; or (2) declare a constraint that prevents them from doing so in accordance with Requirement R8. As concerns were raised about requiring Corrective Action Plans of GOs before they may be formally subject to compliance with standards, there is no requirement for GOs to complete Corrective Action Plans ahead of entering commercial operation in Requirement R2. This is consistent with the underlying intent of the June 2024 Order and more closely resembles the original EOP-012-1 requirements for new generation.

~~However, the Project 2024-03 DT believed that some allowance needed to be made for the units that were thought to be far along in the construction process, using designs that may have predated the development and approval of the EOP-012 standard and which may not meet the standard's requirements for new generation without significant additional work. The Project 2024-03 DT also considered that some of these generating units may even be fully constructed but not yet in "commercial operation" by October 1, 2027 due to the varying requirements for achieving that designation in different regions. While the Project 2024-03 DT did not believe many GOs developing new generating units would be in this position, the Project 2024-03 DT was cognizant of the burden eliminating the Corrective Action Plan option at this stage could place on these entities, especially when combined with the proposed changes to the Generator Cold Weather Constraint criteria. The drafting team was also concerned that if such GOs felt they had no choice but to delay the commercial operation date for their new units past winter 2027-2028 to meet the new requirements, it could reduce needed generation at a time when NERC has projected an increased risk of reserve margin shortfalls in several areas of North America (see 2024 LTRA).~~
In non-U.S. jurisdictions, entities will use the "grandfathering" date established by the Applicable Governmental Authority, if that is not October 1, 2027.

~~The Project 2024-03 DT considered several options to both address the FERC directive and account for this identified concern. These options included extending the "grandfathering" date past October 1, 2027 and redefining "commercial operation" to a less specific phrase, such as "in operation". However, the Project 2024-03 DT determined that maintaining the October 1, 2027 date as the "grandfathering" date was important in the interest of raising the bar for reliability in future cold weather seasons. It did not identify any compelling reason to change either that date or the existing measure of "commercial operation" from the previous versions of the standard. Rather, the Project 2024-03 DT concluded a time-limited Corrective Action Plan option for the first winter season the more stringent requirements for new generation are in effect (i.e. winter 2027-2028) was the most appropriate option to address the issue. This option would clearly separate the units that were far along in construction, and for whom such a limited option might be appropriate and consistent with the underlying findings in the June 2024 Order, and those that were not far along in construction.~~

~~In reviewing the Project 2024-03 DT's determination, the Standards Committee, in carrying out its responsibilities under Section 321 of the NERC Rules of Procedure, determined to carry forward this limited Corrective Action Plan option, with some modifications as needed to clarify the scope and intent in response to stakeholder comments.~~

Rationale for Phased-in Compliance Date for Requirement R2 in Implementation Plan

As noted above, a concern was identified in earlier phases of the development of EOP-012-3 regarding how to account for new generating units that may be too far along in their construction phase to readily implement corrective action plans prior to entering commercial operation the first winter season those requirements would be in effect in the United States (winter 2027-2028).

Under ~~proposed Requirement R2 Part 2.1~~the Implementation Plan, GOs of certain new generating units would have the option to ~~develop a Corrective Action Plan if they are unable to implement the required freeze protection measures for new generation before entering~~enter commercial operation~~,~~ and ~~a Generator Cold Weather Constraint~~have additional time to comply with the more stringent requirements of R2, if a constraint would not apply. For this ~~option~~phased-in compliance date to apply, the GO must have first contractually committed to the design criteria for the unit before June 29, 2023, and the unit must first enter commercial operation between October 1, 2027 and March 31, 2028 (inclusive of the start and end dates). ~~The Corrective Action Plan must be completed by April 1, 2028, a date which~~This reflects consideration of NERC's original proposed effective date of EOP-012-1 requirements for new generation.[9]

~~It is important to note that this is simply an additional *option* for such GO, intended to enable them to enter commercial operation sooner and begin supplying needed power to the grid faster than if they were required to delay their commercial operation dates to provide the required capability.~~
The June 29, 2023 date, included in the Implementation Plan, represents the date by which the Project 2024-03 DT concluded that GOs would have had reasonable certainty regarding the freeze protection requirements for new generation under the EOP-012 standard and should have begun including them in their design criteria for new generating units. FERC issued its order approving EOP-012-1 and the definition of Extreme Cold Weather Temperature in February 2023; however, the Project 2024-03 DT considered comments stating that there was still some regulatory uncertainty past this time, as several entities had filed for rehearing on various aspects of the standard. On June 29, 2023, FERC issued an order addressing arguments raised on rehearing, resolving any remaining uncertainty regarding the standard to which new generation would be expected to perform in the future (see FERC decision).

~~The Project 2024-03 DT and the Standards Committee considered stakeholder comments that this "designed by" date should instead be the effective date of the EOP-012-2 standard, October 1, 2024. Specifically, there were some stakeholder concerns that the standard would be applied retroactively to a date before the first version of the EOP-012 Reliability Standard became effective on October 1, 2024. However, using the EOP-012 effective date for this particular measure would not be consistent with the underlying intent of several directives the February 2023 and June 2024 Orders, which was to speed up the process by which generating units are prepared for the known reliability risks of extreme cold weather. Further, this June 29, 2023 date does not represent a compliance date, but rather the date by which entities would have been on reasonable notice of the specific nature of their new obligations and could take the appropriate steps to change their designs to facilitate compliance upon entering~~

9 Under NERC's original proposed implementation plan for EOP-012-1, this requirement for new generation would have become effective April 1, 2028. In its February 2023 Order, FERC directed NERC to modify the proposed EOP-012-1 implementation plan to reflect the urgency of the need to implement the standard, including to shorten the 60-month implementation plan for existing generating units. Reliability Standard EOP-012-2 shortened these dates and established October 1, 2027 as the "grandfathering" date for new generation.

~~commercial operation several years later. In determining the appropriate demarcation point for the Corrective Action Plan option for new generation, the drafting team determined that units designed after this date should not be eligible.~~
It is important to note that this is simply an additional *option* for such GO, intended to enable them to enter commercial operation sooner and begin supplying needed power to the grid faster than if they were required to delay their commercial operation dates to provide the required capability.

~~Nevertheless, to provide further clarity as to intent and enforceability, the Standards Committee added language to clarify that, for this option to apply, the unit must first enter commercial operation between October 1, 2027 and March 31, 2028. (Recall that Requirement R2 applies only to generation entering commercial operation on or before October 1, 2027 – there is no provision for retroactive applicability.)~~
In summary, the implementation plan for Requirement R2 ~~Part 2.1~~ specifies that, for certain entities that undertook ~~certain design steps~~efforts to finalize their designs before June 29, 2023 before the scope of new requirements became clear, those entities ~~have the option of developing a Corrective Action Plan~~do not have to achieve the required capability during their first winter in commercial operation, and ~~they would not need to delay their commercial operation date if they can complete that plan by April 1, 2028. Entities seeking to use this option~~instead have until April 1, 2028. (If a constraint is applicable, the entity must submit that constraint within 15 days of entering commercial operation). Entities would be expected to demonstrate that they are eligible to use ~~it~~the phased-in timeline, such as through dated contracts showing that it contractually committed to design criteria for the unit in question before that time. It was considered that entities would generally retain such contracts for their units under construction in the normal course of business and this would impose no additional burden.

For all ~~other~~ new generating units entering commercial operation on or after October 1, 2027 that do not meet the above exception, those units must either implement the more stringent capability required in Requirement R2 by their commercial operation date or declare a Generator Cold Weather Constraint~~. This includes units entering commercial operation after March 31, 2028 that are designed before June 29, 2023, as well as generating units entering commercial operation after October 1, 2027 that are designed after June 29, 2023~~. **It is recognized that such generating units may need to delay their originally planned commercial operation date if they do not have the required capability and a Generator Cold Weather Constraint would not apply**. *See* June 2024 Order at P 72. ~~Further, even if an entity has the option to implement a Corrective Action Plan, it is not required to do so. It may delay its commercial operation date until the required capability is installed, if a Generator Cold Weather Constraint would not apply.~~

Rationale for Requirement R3

The 2021-07 Drafting Team created a requirement for existing generating units, as defined in Requirement R3, to be able to operate at their ECWT. Many existing generating units have already demonstrated this capability. An early FERC order on EOP-012-1 rejected a one-hour timing requirement, consequently the 2021-07 DT chose to forego any specific time requirement in Requirement R3. If a generating unit cannot meet the requirements of Requirement R3, it is required to develop a CAP to add

new freeze protection measures or modify existing freeze protection measures to be capable of operations at the ECWT (as calculated in Requirement 1).

Rationale for Requirement R4

General Considerations

Requirement R4 requires GOs to develop and maintain cold weather preparedness plans for their unit(s) and describes the information and documentation required in such plans. It is an expansion of the cold weather preparedness plan required under Requirement R7 of EOP-011-2 and is intended to be used and reviewed regularly by the GO. Originally, Requirement R4 Part 4.5 required the GO to annually inspect and perform necessary maintenance of freeze protection measures. The 2024-03 DT added some clarifying language to ensure that annual inspection and maintenance of freeze protection measures is applied specifically to Generator Cold Weather Critical Components. While other freeze protection measures may be applied to equipment by the GO, the freeze protection measures included in the cold weather preparedness plan with annual inspections and maintenance are expected to be those applied to Generator Cold Weather Critical Components. Working in concert with other parts of EOP-012-3, including but not limited to Requirements R1, R5, R6, and R7, the substantive elements of the cold weather preparedness plan will be subject to review requirements, updated as necessary, and the responsible party (GO or GOP) is required to annually train personnel on the cold weather preparedness plan requirements.

Requirement R4 Part 4.1

In Requirement R4 Part 4.1, the GO is required to include in the cold weather preparedness plan the lowest ECWT, as calculated pursuant to Requirement R1, for each unit using reliable source(s) of data. The 2021-07 DT believed that the GO is in the best position to select the most representative weather information relative to its generating unit. The cold weather preparedness plan will be updated if a new lower ECWT is calculated under the Requirement R1 periodic review language.

Requirement R4 Part 4.2

Requirement R4 Part 4.2 is intended to capture, within the cold weather preparedness plan, the information being developed pursuant to Requirement R1 Part 1.2, which is carried over from the previously approved EOP-011 Standard and requires the GO to document several cold weather performance parameters for the unit. This information is valuable, and in some cases, must be shared with other entities consistent with the data specification requirements contained in TOP-003 and IRO-010. A requirement for the GO to document this information within the cold weather preparedness plan ensures the information is readily available and documented when the GO responds to a data specification. It should be noted that if a Corrective Action Plan extension request is approved, the underlying generator cold weather data, as called out in Requirement R1 Part 1.2, should be correctly identified by the GO and provided to the RCs, BAs, and TOPs as requested. The June 2024 Order mentions this in Paragraph 3. The 2024-03 DT believes that the data specification Reliability Standards applicable to RCs, BAs, and TOPs (e.g., IRO-010 and TOP-003) require the entities to request the information and the

GO is therefore obligated to provide the most current version of the relevant information within a Corrective Action Plan. The 2024-03 DT did not believe a notification Requirement was needed in EOP-012-3 in addition to those already existing in the data specification Reliability Standards. The 2024-03 DT encourages parties to work together to ensure the most accurate and up-to-date information is provided, especially when conditions increase risk to reliable operations. See the Technical Rationale for Requirement R1 for substantive rationale regarding the operating limitations and generating unit minimum temperatures documented in the cold weather preparedness plan.

Requirement R4 Part 4.3

In Requirement R4 Part 4.3, the GO identifies the Generator Cold Weather Critical Components to help inform their decision on where to implement appropriate freeze protection measures. The NERC *Reliability Guideline, Generating Unit Winter Weather Readiness – Current Industry Practices*[10], presents a suggested list of components that GOs may choose to utilize when developing their own Generator Cold Weather Critical Component inventory. The GO shall develop and maintain a list of Generator Cold Weather Critical Components for each unit.

Requirement R4 Part 4.4

Requirement R4 Part 4.4 requires GOs to document the freeze protection measures implemented on Generator Cold Weather Critical Components. These freeze protection measures should include those to reduce the cooling effects of wind. Requirement R4 does not require GOs to install new freeze protection measures to reduce the cooling effects of wind, but rather to identify freeze protection measures for Generator Cold Weather Critical Components that will protect against heat loss and the effect of freezing precipitation, where applicable, and document those measures (e.g., water-resistant insulation, protective shielding, insulated boxes, etc.). These measures could include temporary measures as well, such as wind breaks, but there is no expectation for entities to list all climate-controlled areas as freeze protection measures. Specifically, the freeze protection measures applied to Generator Cold Weather Critical Components must be captured in the cold weather preparedness plan.

Requirement R4 Part 4.5

Requirement R4 Part 4.5 is largely carried over from the previously approved EOP-011 Standard and requires annual inspection and maintenance of the freeze protection measures applied to Generator Cold Weather Critical Components identified in the cold weather preparedness plan. The 2024-03 DT added clarifying language to emphasize the need to effectively mitigate risk on the Generator Cold Weather Critical Components. This Requirement ensures these freeze protection measures will be ready and serviceable when needed.

Rationale for Requirement R5

The 2024-03 DT noted that there could be a combination of operations and maintenance personnel that require training, so minor adjustments were made to that extent. Additionally, the personnel may not be physically located at the generator site depending on how an entity implements their cold weather

preparedness plan(s).

Rationale for Requirement R6

Key Recommendation 1d: To require Generator Owners that experience outages, failures to start, or derates due to freezing to review the generating unit's outage, failure to start, or derate and develop and implement a corrective action plan (CAP) for the identified equipment and evaluate whether the CAP applies to similar equipment for its other generating units. Based on the evaluation, the Generator Owner will either revise its cold weather preparedness plan to apply the CAP to the similar equipment or explain in a declaration (a) why no revisions to the cold weather preparedness plan are appropriate, and (b) that no further corrective actions will be taken. The standard drafting team should specify the specific timing for the CAP to be developed and implemented after the outage, derate, or failure to start, but the CAP should be developed as quickly as possible and be completed by no later than the beginning of the next winter season.

The Key Recommendation from the Joint Inquiry Report recommended a Reliability Standard that requires GOs to develop a Corrective Action Plan for generating units that experience outages, failures to starts, or derates due to freezing. The Joint Inquiry Report identifies that most of the outages and derates in the February 2021 event were due to freezing of instrumentation, transmitters, sensing lines, or wind turbine blades (p 166 in the Joint Inquiry Report). As such, the 2021-07 DT followed the Joint Inquiry Report recommendation to require a Corrective Action Plan when the apparent cause of the event is freezing. The 2021-07 DT developed parameters around these events to clarify a reasonable baseline of what level of derate qualified as an event and provide additional language to identify what constitutes a start-up failure. With the additional clarifications, the 2021-07 DT determined that the Reliability Standard would benefit from a defined term, to clearly and efficiently state what constitutes an event. The result was a defined term, Generator Cold Weather Reliability Event, that describes the circumstances for which a Corrective Action Plan is required (i.e., when a freezing event affects the equipment within the control of the GO). The defined term made the Reliability Standard easier to understand and implement by providing clear and reasonable factors to determine whether the impact of an event requires mitigation. However, because of the June 2024 Order, the 2024-03 DT updated Requirement R6 to provide clearer timeline obligations for those units that suffer a Cold Weather Reliability Event. In general, the 2024-03 DT understands that if a Generator Cold Weather Reliability Event occurs, GOs will remediate the issue as soon as possible.

General Considerations for All Corrective Action Plans

To simplify the proposed requirements related to creating a Corrective Action Plan, the 2021-07 DT used the NERC Definition of a Corrective Action Plan. The Corrective Action Plan definition reads "A list of actions and an associated timetable for implementation to remedy a specific problem." As written, the definition requires two parts for a document to qualify as a Corrective Action Plan, i.e., a list of items to be addressed and a timeline for completion. A Corrective Action Plan without both a list of actions and the timeline to implement is not complete. The 2024-03 DT provided additional language for Corrective Action Plans to clarify expectations for those Corrective Action Plans created as a result of a Generator

Cold Weather Reliability Event and other Corrective Action Plans referenced throughout the Requirement language. The resulting language kept the underlying structure developed during previous Projects but clarified and added information as needed to meet the June 2024 Order.

The Corrective Action Plan requirement applies to Generator Cold Weather Reliability Events as well as other instances of required actions to support reliable operations within the EOP-012-3 Standard Requirements. It should be noted that nothing in this ~~standard~~Standard prevents a GO from taking its own corrective actions resulting from events that do not meet the criteria of a Generator Cold Weather Reliability Event. Startup failure criteria were based on the GADS definition with the removal of "following an outage or reserve shutdown", since the definition of reserve shutdown is different in GADS than it is in some of the Regional Transmission Organizations (RTOs).

Requirement R6 requires the GO to develop, implement, and complete a Corrective Action Plan prior to the first day of December following a Generator Cold Weather Reliability Event. Note that the 2024-03 DT, Standards Committee in the exercise of its responsibility under Section 321 of the NERC Rules of Procedure and NERC staff, considered early occurrences (e.g., September, October, or November) of Generator Cold Weather Reliability Events and provided a footnote to allow remedial activities to be completed by December 1 of the following calendar year. The December 1 date was chosen based on the ~~FERC directives~~guidance in the June 2024 Order and the urgency stated within the June 2024 Order regarding this risk. ~~This timeframe was maintained by the 2024-03 DT to~~ A number of commenters in the final posting suggested that this timeline instead be fixed, such as 12 months, to provide a uniform timeline for implementation regardless of when the event occurred. Such suggestions were considered but declined, as they were not thought to address the risk with the timeliness identified in the FERC order, and further, corrective actions are likely to be implemented in the fall as part of winter preparations are typically performed or outages for more extensive efforts can be secured.

Requirement R6 would allow GOs to review multiple events holistically following a winter season, if that scenario occurs, and create one Corrective Action Plan for components with common failure causes. Care should be taken when developing a multi-unit or multi-event Corrective Action Plan to ensure it meets the Corrective Action Plan criteria for each unit (e.g., actions and timetables may be different.)

The 2021-07 DT determined that Corrective Action Plans would be required for any freezing event that occurs at temperatures at or above the site's ECWT in accordance with the definition of a Generator Cold Weather Reliability Event. Using the site's ECWT as the threshold, as opposed to the generator unit minimum temperature as determined by the GO, achieves the following:

- Provides a consistent basis for the temperature at which Corrective Action Plans are required for all GOs
- Provides a consistent basis for when Corrective Action Plans are required for all generation types
- Provides a consistent basis for when Corrective Action Plans are required regardless of the level of effort that GOs may have applied to-date winterizing their generators such that they can operate to the ECWT that their sites will reasonably experience

- Removes any incentive (perceived or real) to not further winterize GOs sites to meet the ECWT at the GO site by not providing a window where one site might not be subject to the Corrective Action Plans requirement while sites in the same vicinity experiencing the same temperatures are subject to this requirement
- Removes any disincentive for GOs to design the units to operate well below the ECWT for a site by not requiring them to perform Corrective Action Plans while sites in the same vicinity experiencing the same temperatures are subject to this requirement

The 2024-03 DT provided clarifying language to have Corrective Action Plans developed in response to Generator Cold Weather Reliability Events developed and completed by the first day of December of the winter season following the Generator Cold Weather Reliability Event. Allowances for events which occur ~~early winter season, which varies across the North American continent,~~in September, October, or November were provided with the expectation that more transient fixes occurring after a Generator Cold Weather Reliability Event would be applied quickly but allowing a reasonable time horizon for compliance with this Requirement (i.e., prior to December 1 of the following calendar year). A Corrective Action Plan triggered by a Generator Cold Weather Reliability Event and for which the apparent cause is the failure of relatively simple existing piece of freeze protection equipment, the scope of the Corrective Action Plan may be documented after the fact. Such prompt repairs may be completed before creation of the Corrective Action Plan, and the GO may complete the implementation of the Corrective Action Plan simply by evaluating the requirements of R6 and documenting how and when the repair work was completed. An example of this circumstance would be a freezing event caused by a single heat trace circuit failure which would have been sufficient to prevent the event had it not failed.

The June 2024 Order also directed changes affecting the application of a Generator Cold Weather Reliability Event Corrective Action Plans to other units within a GO's fleet. The 2024-03 DT added clarifying language to provide guidance on what the extent of condition (i.e., the review of other generating units) should encompass to help alleviate concerns raised by the industry during the comment and ballot period. Each GO should already know, per Requirement R4, the freeze protection measures on Generator Cold Weather Critical Components. The GOs also have the responsibility, per Requirement R4, to annually maintain and inspect the freeze protection measures on Generator Cold Weather Critical Components. Effectively those Requirements would support quick identification of same or similar equipment susceptible to freezing.

The 2024-03 DT, and later the Standards Committee in the exercise of its responsibility under Section 321 of the NERC Rules of Procedure, established a 12-calendar month window from the time of the originating Generator Cold Weather Reliability Event to complete its fleet-wide review for similar vulnerabilities and develop or update such a Corrective Action plan to address them. In response to multiple stakeholder comments, the Standards Committee provided a 24-calendar to no later than 36-calendar month window (initiated based on the date of the Generator Cold Weather Reliability Event) to implement corrective actions. GOs that complete their fleet-wide reviews sooner than the 12 months allowed would have a longer period of time overall to implement any required corrective actions, incentivizing prompt action to identify the extent of condition across a fleet. While the FERC directive suggesting a potentially longer

staggered implementation was considered for more complex implementations, it was determined that developing specific requirements for staggering often presents many logistical challenges, and it may not promote an orderly and efficient implementation depending on the issue needing to be addressed. Allowing up to 36 calendar months total to complete corrective actions would allow GOs with larger fleets to accommodate any required changes. Industry experience with Winter Storms URI and Elliott suggests that the timelines are sufficient in general to mitigate reliability risks. However, a Corrective Action Plan extension may be requested if a particularly complex implementation issue arises requiring longer time to implement.

Entities should evaluate the issue with the freeze protection measure that may have initiated the Generator Cold Weather Reliability Event to see if the maintenance and inspection efforts need to be adjusted (at the unit that suffered the Generator Cold Weather Reliability Event as well as at other similar units with similar freeze protection measures applied to Generator Cold Weather Critical Component(s)).

The existence of a Corrective Action Plan should not discourage the GO from applying any other actions necessary and feasible to prepare a unit to perform at extreme cold weather temperatures during the Corrective Action Plan implementation period.

The 2024-03 DT also created language that allows for Corrective Action Plan extension requests using the NERC Process. ERO Enterprise staff developed the NERC Process that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule). While TPL-007 has not been utilized extensively, the NERC Process is flexible enough to manage the expected submittals. The DT is not in control of updates to the NERC Process but the NERC staff have been engaged and responsive to industry concerns noted during the Standard development timeline. The NERC Process will allow a thorough review in a timely manner for any Corrective Action Plan extension requests including those that go beyond the 24 or 48 calendar month timetables. While there may be actions impacting the implementation and completion of Corrective Action Plans beyond the control of GOs (e.g., supply chain issues), the GOs should accelerate completion of corrective actions as much as possible to support reliable operations.

The 2024-03 DT updated language regarding Generator Cold Weather Constraints to clarify expectations. Please review Requirements R8 and R9 and Attachment 1 for further discussions of Generator Cold Weather Constraints.

In carrying out its responsibilities under Section 321 of the NERC Rules of Procedure, the Standards Committee determined to carry forward the general framework developed by the Project 2024-03 DT, with some modifications. First, to address stakeholder concerns about the lack of a clear deadline for implementing Corrective Action Plans, the Standards Committee added a deadline to develop Corrective Action Plans for units experiencing the Generator Cold Weather Reliability Event. This deadline would be the same as the date any required Corrective Action Plans for the units must be completed – by the first day of the first December following the event (or for ~~early season~~September, October, and November events, the first day of the first December of the following calendar year). By adding this deadline, the Standards Committee intends to add clarity as to the latest date by which such Corrective Action Plans

must be developed, while recognizing that the main reliability benefit will come from completing the corrective actions in an expeditious manner. As Corrective Action Plans contain important information to document causes and corrective actions that may inform future winter operations, there is still a reliability benefit to develop these Corrective Action Plans, even if any corrective actions in the Corrective Action Plan are completed in short order.

Rationale for Requirement R7

In EOP-012-2, R7 was expanded from EOP-012-1 to provide additional definition on the requirements to implement a Corrective Action Plan, and to meet the direction for this requirement set by the February 2023 FERC Order. One such direction was to define expectations on implementation timelines for Corrective Action Plans. Under EOP-012-2 R7, Corrective Action Plans were divided into two categories: 1) those which address existing freeze protection measure(s), and 2) those which require new equipment or freeze protection measure(s). The former category required completion of the Corrective Action Plan to remedy the cause(s) within 24 months, and the latter required completion of the Corrective Action Plan within 48 months. The 2021-07 DT modeled this timeline structure after similar Corrective Action Plan implementation requirements in TPL-007. These are maximum durations and entities are expected to work diligently to correct issues and take prompt actions to mitigate future issues as soon as practical. At the same time, the 2021-07 DT recognized that the following time-consuming activities make the 24 and 48 calendar months maximum timelines reasonable: scoping applicability to similar units, freeze protection engineering and design, project development, budgeting processes, material supply lead times, outage scheduling, skilled labor availability, and startup/commissioning. However, the June 2024 Order established directives to clarify timelines and responsibilities associated with Corrective Action Plans. The 2024-03 DT chose to specifically remove Corrective Action Plan obligations for Generator Cold Weather Reliability Events and place those in Requirement R6. For Requirement 7, the 2024-03 DT provided clarifying language regarding existing and new freeze protection measures and the associated completion timelines. Language was provided for Corrective Action Plans that may include changes to existing freeze protection measures and addition of new freeze protection measures to help clarify expectations for completing the corrective actions. The Project 2024-03 DT discussed the adjectives “new” and “existing” freeze protection measures as it is used within the Requirements. If there is the failure of a freeze protection measure (e.g., heat trace) and that freeze protection measure is replaced with the same/similar/commonly used technology that is considered “existing”. The change of a heat trace from 40 foot to 60 foot or change in the amperage capability of the heat trace is not a “new” freeze protection measure. A change in lightbulb wattage in an enclosure should not be considered “new”. The industry did provide some examples of “new” freeze protection measures (i.e., new permanent structures or new technologies not already applied) that may take longer to implement depending upon the nature of the freeze protection measure. A wind block made of tarps and a wooden or steel frame should not be considered “new” and require 48 months to implement even if the site did not have a wind block already. Care should be exercised by GOs in the use of “new” and “existing” freeze protection measures and the resulting Corrective Action Plan timelines. Industry experience with Winter Storms URI and Elliott suggests

that the shorter timelines are sufficient in general to mitigate reliability risks. Entities are expected to work diligently to correct issues and take prompt actions to mitigate future recurrence. The 2024-03 DT updated Parts 7.1.3. and 7.1.4 for completeness to ensure updates would be made to document needed changes to the cold weather preparedness plan(s) to eliminate recurrence of issue(s) identified in the Corrective Action Plan. In clarifying these timeframes, the 2024-03 DT considered the FERC directives.

Within the revised Requirement R7, the GO is required to implement the Corrective Action Plan within a timetable defined by the GO in the Corrective Action Plan but limited by maximum durations in Part 7.1. If the GO is unable to complete the Corrective Action Plan within the time limits in Part 7.1~~, or the corrective action(s) change,~~ the GO is required to ~~update~~request an extension for the Corrective Action Plan with justification per Part 7.2. GOs that are unable to complete the Corrective Action Plan ~~due to a Generator Cold Weather Constraint~~ without an extension or if an extension does not support implementation of a freeze protection measure are required under Part 7.3 to create a declaration of the Generator Cold Weather Constraint which shall be provided to the Compliance Enforcement Authority per Requirement R8. Further requirements for the Generator Cold Weather Constraints are provided under Requirements R8 and R9.

The 2024-03 DT also created language that allows for Corrective Action Plan extension requests using the NERC Process. ERO Enterprise staff developed the NERC Process that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule). The NERC Process will allow a thorough review in a timely manner for any Corrective Action Plan extension requests including those that go beyond the 24 or 48 calendar months. The 2024-03 DT utilized the precedent set by TPL-007 to ensure the unique circumstances of each request will be considered while also avoiding potential compliance burdens which may not have a corresponding reliability benefit (e.g. specific timelines for submission and approval of extension requests). While there may be actions impacting the implementation and completion of Corrective Action Plans beyond the control of GOs (e.g., supply chain issues), the GOs should accelerate completion of corrective actions as much as possible to support reliable operations. It is expected that extension requests will be limited in nature. GOs will have to provide clear justifications with supporting materials within the extension request. Due diligence in ordering equipment, obtaining permits, etc., will be considered as part of the determination of whether a particular set of facts constitute circumstances beyond the control of the entity. Denials of extension requests will be minimized if GOs work diligently to correct issues and take prompt actions. Denial of an extension means the initial timelines for corrective actions must be met. As a result of comments received during the ROP 321 comment period, NERC staff updated the NERC Process. Several entities submitted comments emphasizing the need for consistency and transparency in Generator Cold Weather Constraint evaluations across the ERO Enterprise, or offering suggestions to improve the appeal process. These comments were shared with NERC Compliance Monitoring and Enforcement Program staff during the ROP 321 comment evaluation. NERC agreed that ensuring consistency and transparency in these determinations will be of the utmost importance. NERC has revised the draft EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process to provide additional information on how this will be accomplished. NERC staff informed the Standards Committee that the ERO Enterprise is planning additional outreach efforts in the early implementation period to provide guidance to entities on the types of Generator Cold Weather Constraints that are and are not being validated. Guidance will include

the types of documentation that would be most helpful to the entity and the ERO Enterprise to making these determinations in a timely manner.

The 2024-03 DT updated language regarding Generator Cold Weather Constraints to clarify expectations. Please review Requirements R8 and R9 for further discussions of Generator Cold Weather Constraints.

If one or more actions within a Corrective Action Plan fall under a Generator Cold Weather Constraint declaration, it is the intent of the DT that only those ~~constraint~~Generator Cold Weather Constraint affected actions would not be implemented as part of the Corrective Action Plan. The remaining corrective actions should be implemented per the timelines provided unless dependent upon the corrective action triggering the Generator Cold Weather Constraint declaration.

Rationale for Requirement R8

In the February 2023 FERC Order, the Commission expressed concern that a GO may make a Generator Cold Weather Constraint declaration without informing planning and operational entities (e.g., the BA) that are expecting the reliable operation of the generating unit to its ECWT. An additional concern was that the Generator Cold Weather Constraint declarations may be used by a functional entity as an opt-out of compliance with requirements set forth in the standards or in a corrective action plan. To mitigate the concern, the Commission directed NERC to work with Commission staff and submit a data collection and assessment plan that contains information related to GO constraint declarations and explanations thereof. The 2021-07 DT expected that ERO Enterprise compliance staff will be responsible for reviewing declared Generator Cold Weather Constraints and assessing compliance with the Generator Cold Weather Constraint definition criteria in accordance with established processes. The June 2024 Order directives included more direct language that required NERC to receive, review, evaluate, and confirm the validity of each Generator Cold Weather Constraint in a timely manner. Additionally, the June 2024 Order directives required an increase in the frequency of reviews of Generator Cold Weather Constraints.

Matters regarding the specifics of such reviews are addressed in the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process, which is maintained separately from the standard as a compliance process. If a Corrective Action Plan extension request is denied by the CEA, then the GO may request a joint CEA/NERC review of the denial. The time to request a joint review was extended in the NERC Process based on comments received during the ROP 321 comment period.

The 2024-03 DT updated Requirement R8 to require the GO to submit, to the Compliance Enforcement Authority, a Generator Cold Weather Constraint in accordance with Attachment 1 under specific timelines. The ERO Enterprise staff have developed the ~~Generator Cold Weather CAP Extension and Constraint Process~~EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") that leveraged the current TPL-007 Corrective Action Plan extension process (See ERO Enterprise Periodic Data Submittal Schedule) as a foundation for the Generator Cold Weather Constraint process. The NERC Process will allow a thorough review in a timely manner for any Generator Cold

Weather Constraint submitted. The 2024-03 DT created Attachment 1 to provide clear expectations on Generator Cold Weather Constraint conditions. Attachment 1 contains some known Generator Cold Weather Constraint conditions as well as examples of other case-by-case Generator Cold Weather Constraint conditions that may also be considered valid. To be clear, all Generator Cold Weather Constraint declarations require submittal per the NERC Process. The 2024-03 DT could not create an exhaustive list of Generator Cold Weather Constraint conditions but provided language that allows professional judgement to be utilized. The 2024-03 DT believes the NERC Process in conjunction with Requirement R8 and Attachment 1 effectively meets the FERC directive regarding receiving, reviewing, evaluating, and confirming the validity of Generator Cold Weather Constraints.

To address concerns about potential administrative burdens associated with repeated, known issues at generating unit(s) with a valid Generator Cold Weather Constraint, the Project 2024-03 DT developed Part 8.4. Part 8.4 provides that, in such a case, the GO will provide notice to the CEA. This helps maintain visibility over known reliability issues while reducing the administrative burdens associated with repeating requirements in this case.

The 2021-07 DT believed that Generator Cold Weather Constraint declarations would be the exception, but it is clear to the 2024-03 DT that certain conditions may exist (based on general weather patterns) that will increase the amount of Generator Cold Weather Constraint declarations and subsequent submittals. In anticipation of that scenario, and following the June 2024 Order, the 2024-03 DT considers the NERC Process a valuable tool to capture data that may help future understanding of the effectiveness of the ECWT. The February 2023 FERC Order and subsequent NERC filing require the collection of data to evaluate the effectiveness of the EOP-012-3 Reliability Standard.

Updated Generator Cold Weather Constraint declarations would also require an update to the operating limitations provided via data specifications to the entities overseeing reliability (e.g., BA, TOP, or RC). In this manner, information relevant to valid Generator Cold Weather Constraint declarations are made available to the planning and operational entities pursuant to their data collection authority contained in TOP-003 and IRO-010. BAs, RCs, and TOPs should ensure complete coverage and timeliness of cold ~~weather related~~weather-related data submission within their data specifications especially during local forecasted cold weather.

Rationale for Requirement R9

Based on multiple comments regarding Requirement R8, the FERC directive regarding periodicity of reviews, and what a GO should do if a Generator Cold Weather Constraint is determined to be no longer valid, the 2024-03 DT developed a separate new Requirement R9.

Initially EOP-012-1 required an annual review of Generator Cold Weather Constraints. That frequency of reviews was subsequently changed to five calendar years in EOP-012-2. The June 2024 Order directed that the review frequency be increased from the five-year periodicity. While GOs should perform a

review and update any Generator Cold Weather Constraint declarations as needed, the 2024-03 DT has developed language requiring a review of validated Generator Cold Weather Constraints every 36 calendar months.

Initially, the Project 2024-03 proposed that reviews be conducted every 24 calendar months. There were multiple concerns raised about the 24 calendar month periodicity. Based on consideration of these concerns, the 2024-03 DT chose, and the Standards Committee, in carrying out its responsibilities under Section 321 of the NERC Rules of Procedure, determined to carry forward the decision, to extend it to 36 calendar months. Reliability Standard CIP-014, a Reliability Standard addressing another significant risk, is proposing a review every 36 calendar months. Based on information shared at the Technical Conference held on November 12, 2024, changes to some technologies that may affect Generator Cold Weather Constraints may take a significant amount of time (well in excess of 36 months) to become available. By shortening from the five calendar years, the 36 calendar month timeline provides a reasonable approach to meeting the Commission's directives without creating undue administrative burden to periodically monitor if Generator Cold Weather Constraints remain valid or if new technologies have become available that effectively obviate the originally validated Generator Cold Weather Constraint.

Part 9.1 addresses what a GO must do if it finds that a declared Generator Cold Weather Constraint is no longer valid. For example, a new technology exists that would address the freezing issue, and no other Generator Cold Weather Constraint criteria would apply. In that case, the GO must develop a Corrective Action Plan or update an existing Corrective Action Plan (if applicable), in accordance with the requirements for Corrective Action Plans in Requirement R7. This would include timetables specifying completion of the corrective actions in accordance with that requirement.

Attachment 1

In the development of Attachment 1, the 2024-03 DT started with a list of Generator Cold Weather Constraint examples developed by the 2021-07 DT in the EOP-012-2 Technical Rationale. The foundational scenarios were presented in a way that were supportive of efforts but based on comments received the 2024-03 DT felt inclusion in the Standard to be a more effective way of memorializing the scenarios. The 2024-03 DT chose to utilize a limited and discrete list of known Generator Cold Weather Constraints as well as a description of other case-by-case situational descriptions that may constitute Generator Cold Weather Constraints. All declared Generator Cold Weather Constraints must be confirmed as valid by the Compliance Enforcement Authority. Nevertheless, the limited and discrete list is intended to describe specific circumstances that, if met, would have a very high probability of being approved. The 2024-03 DT discussed providing clarity with examples (as noted by FERC Order Paragraph 47) knowing that additional instances or conditions that may be considered a Generator Cold Weather Constraint may exist.

Per the FERC Order, NERC staff are responsible to provide a process describing the receipt, evaluation, approval (as needed), and validation of Generator Cold Weather Constraints. This process is captured in the ~~Generator Cold Weather CAP Extension and Constraint Process~~EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process ("NERC Process") document.

Once a declaration is approved by the CEA it is considered valid. Changes to valid Generator Cold Weather Constraints must be re-submitted to the CEA to remain valid. Regardless of a Generator Cold Weather Constraint being of the "known" type, a GO is still required to submit known Generator Cold Weather Constraints for approval. There were some comments received during the ROP 321 comment period that suggested automatic or limited review of "known" Generator Cold Weather Constraints. No changes were made to the Standrad or the NERC Process as those did not support directives within the June 2024 Order.

The 2024-03 DT is intentionally leaving room for additional instances of Generator Cold Weather Constraints to be presented as it would be impossible to foresee every potential set of circumstances that could possibly constitute a constraint. Several conversations occurred during public meetings that were captured within Attachment 1. The determination to include specific examples of Generator Cold Weather Constraints really depended upon industry interaction on what prevalent and reasonable issues were being presented. Some issues, such as voiding equipment warranties, may initially be considered case-by-case until such time there are clear indications from the industry (or OEMs) that application of a specific freeze protection measure would violate a warranty. No specific examples were provided by industry to label voiding a warranty as a known Generator Cold Weather Constraint. Furthermore, the 2024-03 DT wants to ensure that the Standard language supports the development and adoption of new freeze protection measures, practices, methods, or technologies while not immediately requiring that the new freeze protection measures, practices, methods, or technologies be implemented industry-wide. The 2024-03 DT encourages additional study and implementation of freeze protection measures to remove Generator Cold Weather Constraints, as appropriate, over time.

The 2024-03 DT updated the definition of Generator Cold Weather Constraints to provide clarity as directed by FERC. Additional updates to the definition were provided based on comments received during the ROP 321 comment period. In addition to modifying the definition, the 2024-03 DT developed Attachment 1 which was updated during the ROP 321 comment period. Requirement R8 provides entities a clear understanding of what is expected when managing Generator Cold Weather Constraints and directly references use of Attachment 1. The DT broadly categorized Generator Cold Weather Constraints into two types; known and those that would be determined on a case-by-case basis.

The first of the known Generator Cold Weather Constraints, addressing low temperature operability of wind turbine towers, was debated at length in the 2024-03 DT meetings. Discussion among the Drafting Team, observers, and in the Technical Conference indicated a typical limit of -22°F for operation of wind turbines. This typical limit may apply specifically to heated areas or equipment within the nacelle and not be associated with other known ductile-to-brittle transition temperatures for specific mild steel alloys used in turbine towers. Nevertheless, unless a tower is constructed of Austenitic stainless steel or other face-centered cubic atomic structure materials, such a transition temperature generally will exist. The dynamic stresses of operating the wind turbine below such transition temperatures could imperil the structure itself. Anecdotally, it was noted that this limit would cause this Constraint to apply to a portion of the north-central United States and central Canada. It was broadly recognized that the standard needs to recognize and allow this limitation for existing wind turbine tower equipment, and the DT sought to determine an appropriate date beyond which it should be expected that industry can meet low temperature operating capability. Ultimately, October 1, 2029 was established as the manufacturing limit date for compliance of new wind turbine towers. This was determined based on an accelerated interpretation of general feedback from the 2024-03 Technical Conference indicating that generational technological development cycles in the industry are on the order of 5-7 years. The October 1, 2029 date would allow four years beyond the anticipated implementation date of EOP-012-3 (October 1, 2025) for manufacturers to select, apply, test, and begin production of wind turbine towers constructed of materials capable of lower temperature operation appropriate for those locations with Extreme Cold Weather Temperatures below the limits associated with current tower material designs[10]. In addition, the 2024-03 DT also received feedback through industry outreach from participants indicating delivery and construction lead times for wind turbines were years into the future, providing additional support for the selected dates. The language in the Standard also requires those units to enter commercial operation before October 1, 2031, which prevents an entity from simply procuring an abundance of equipment prior to the manufacturing date limit (October 1, 2029) and constructing them over a long period of time in the future. The two-year gap was established to give a reasonable timeframe for entities to receive, construct, and commission the equipment. The DT felt that these dates would appropriately allow projects that are currently in different phases of planning or execution to be completed while also creating end dates beyond which wind turbine towers must be designed and erected to meet all aspects of EOP-012-3 and

[10] The DT also consulted with a representative from a wind OEM with experience in operations in Northern Europe, United States, and Canada, all areas that can experience extremely low temperatures. This representative indicated that there were no wind turbine tower designs in their current and projected future global portfolio that operate at temperatures colder than -30 degrees Celsius (-22 degrees Fahrenheit). The OEM follows IEC 61400-1 Ed 2019 (Chapter 14 Cold Climate)(https://webstore.iec.ch/en/publication/26423) and when operations as low as -30 degrees Celsius is desired, low temperature environmental modification kits are added.

this particular known Generator Cold Weather Constraint would no longer be considered valid. During the ROP 321 comment period there were a few comments regarding the timeframe to consider for wind turbines to meet the lower ECWT. One comment that might be considered in the future was that the wind turbine tower "known" Generator Cold Weather Constraint be changed to October 1, 2035, and October 1, 2037, respectively to better reflect the likely longer duration development cycle for new towers using specialty steel. The Standards Committee in the exercise of its responsibility under Section 321 of the NERC Rules of Procedure did not feel compelled to make the suggested change. The need for urgency reflected in the FERC directives in the June 2024 Order and the nature of the directives supported the decision.

The list for known Generator Cold Weather Constraints included a section devoted to the application of freeze protection measures to meet the Requirements of EOP-012. The Project 2024-03 DT initially had individually listed the scenarios but felt capturing the issues under a single scenario, the application of freeze protection measures, was better suited for the Attachment 1 material. A key to inclusion on the list was reasonableness in light of what may be available to use within the industry. Replacing wind turbine blades solely for the purpose of adding de-icing or ice-minimizing capabilities was not consider a reasonable approach. While the lack of solar-related Generator Cold Weather Constraints received a few comments during the ROP 321 comment period, no industry supplied examples were provided outside the removal of frozen precipitation provided to the Project 2024-03 DT. The Project 2024-03 DT did discuss types or techniques of removal (e.g., tilting panels if applicable, heat applications, or sweepers) and came to an understanding that some suggestions could damage the solar panel itself. Industry could supply case-by-case examples of solar-related Generator Cold Weather Constraints that may be captured in the future. Applying heat upstream of inlet air filters was noted as a particular issue for plants to incorporate. Wind turbine heat tracing or de-icing are in very early stages of use and were considered as known Generator Cold Weather Constraints by the Project 2024-03 DT. No additional comments received during the ROP 321 comment period required changes to the known list.

~~Regardless of a Generator Cold Weather Constraint being of the "known" type, a GO is still required to submit known Generator Cold Weather Constraints for approval.~~

The case-by-case situations and circumstances that may constitute a Generator Cold Weather Constraint are described separately. The enumerated list in Attachment 1 is not intended to be exhaustive but rather to provide clear descriptions of circumstances that may constitute Generator Cold Weather Constraints depending on the facts and circumstances presented by the GO. Generator Operators bear the burden of defending and supporting their declared constraints while the ERO bears the burden of confirming them as valid, or not. While some comments received during the ROP 321 comment period noted lack of guidance provided in Attachment 1, no substantial changes were provided or discretely requested by industry. The flexibility provided in the case-by-case determinations will allow a GO to reasonably present its facts for consideration of a valid Generator Cold Weather Constraint. NERC staff updated the NERC Process, based on comments received, to support provision of information to the industry on Generator Cold Weather Constraint validation efforts.

The Project 2024-03 DT received a few examples of issues that were incorporated into the case-by-case list. It is not known how pervasive some of the case-by-case Generator Cold Weather Constraints may be

in the industry. NERC committed to providing information on what the CEAs may be seeing as validation of Generator Cold Weather Constraints occur. This may shed some light on what a more pervasive issue may be than one-off cases of Generator Cold Weather Constraints.

While the Project 2024-03 DT supports the idea that voiding an equipment warranty is an approach to applying freeze protection measures that should be avoided, no specific instances were provided to the team. To allow for the possibility that such a condition may exist, the situation was listed in the case-by-case section.
Exceeding a design limitation that would impair or degrade the effective operation of any unit is a situation that should be actively avoided. During the Project 2024-03 public discussions, the idea was brought up a few times but no specific issues were noted. Solar and battery OEMs appear to not include wind speed when determining the temperature range for operations. If issues are discovered with any type of facility, the validation efforts of the CEAs may reveal a trend worth noting to the industry.

Physical limitations for the application of freeze protection measures was discussed by the Project 2024-03 DT with the few examples provided noted in the case-by-case list. The discussions appeared to limit the population for the application of the freeze protection measures but it was important to capture.

The Project 2024-03 DT discussed analysis of freeze protection measures to determine effectiveness. There was concern by the industry that if one Generator Owner applied a particular freeze protection measure that there might be an assumption that it should be applied broadly. Innovation of freeze protection measures should not be stifled by regulatory Requirements nor should there be an assumption that the freeze protection measures will work effectively for every location. To that point the Project 2024-03 DT felt that an analysis was required to support the actions of a Generator Owner. There were a few comments received in the ROP 321 comment period regarding clarity around “generating unit(s) of comparable types in regions that experience similar winter climate conditions.” The Project 2024-03 DT included that phrasing with the understanding that entity’s would be able to clearly demonstrate why a freeze protection measure may not be effective for their unit(s). The Standards Committee in the exercise of its responsibility under Section 321 of the NERC Rules of Procedure did not feel compelled to make any changes to the phrasing. NERC may provide further guidance in the future but entities are encouraged not to over analyze the phrasing in the support of reliable operations.
Among these circumstances, the DT recognized the need to balance potential adverse effects to the Bulk Power System reliability caused by requiring ~~implementing~~implementation of a freeze protection measure with the beneficial effects of doing the same. Because such circumstances can and do change by location and over time, this weighing process is best done on a localized basis and ideally interactively between the GO and other affected functional entities while broadly considering immediate and potential future impacts of a declared constraint.

“Case-by-Case Determinations of Generator Cold Weather Constraints” 5a and 5b (accelerated premature retirement, cancellation of a planned unit) were revised based on comments received during the ROP 321

comment period. Language to require the Generator Owner to have an attestation signed by an officer of the company to accompany its determination, made through an analysis, that the constraint applies was added. A company officer is a high-ranking individual within a corporation responsible for managing specific areas of the business. This addition was intended to address a concern about potentially questionable economic constraint declarations being submitted for CEA review. The change is not expected to meaningfully increase the administrative burden for affected Generator Owners seeking to make such a declaration.

Two ~~particular~~additional cases seemed particularly well-suited for a threshold for quantification of impacts: those that reduce a generating unit's real or reactive power when the freeze protection measure is not in place and those that would reduce net dependable capacity during summer or at Peak Demand. These two cases are addressed in sections 5.c. and 5.d. of Attachment 1. In them, the DT has selected a value of three (3) percent, reduction as an appropriate level of impact above which the deleterious impact to the Bulk Power System resulting from requiring a specific freeze protection measure may be appropriately determined to outweigh the benefits of applying the measure. Recognizing that local and temporal conditions are best understood, measured and predicted by the GO and affected functional entities, the DT chose to allow flexibility in the selected three percent value when a different value is supported by the appropriate functional entity as more supportive of reliable operation of the grid.

In addition to being a sensible threshold, use of a three (3) percent value has precedent in BAL-002-WECC-3 where it is used as a barometer for reliable operations in terms of Contingency Reserve.

The language provided in both the known and case-by-case portions of Attachment 1 is meant to describe criteria that are objective, unambiguous, and auditable. Guidance on the Generator Cold Weather Constraints could be supported by the industry, NERC, and the Regions through various methods. It is important to work collaboratively to understand the conditions presented and be able to support validation of the Generator Cold Weather Constraints as EOP-012-3 is implemented

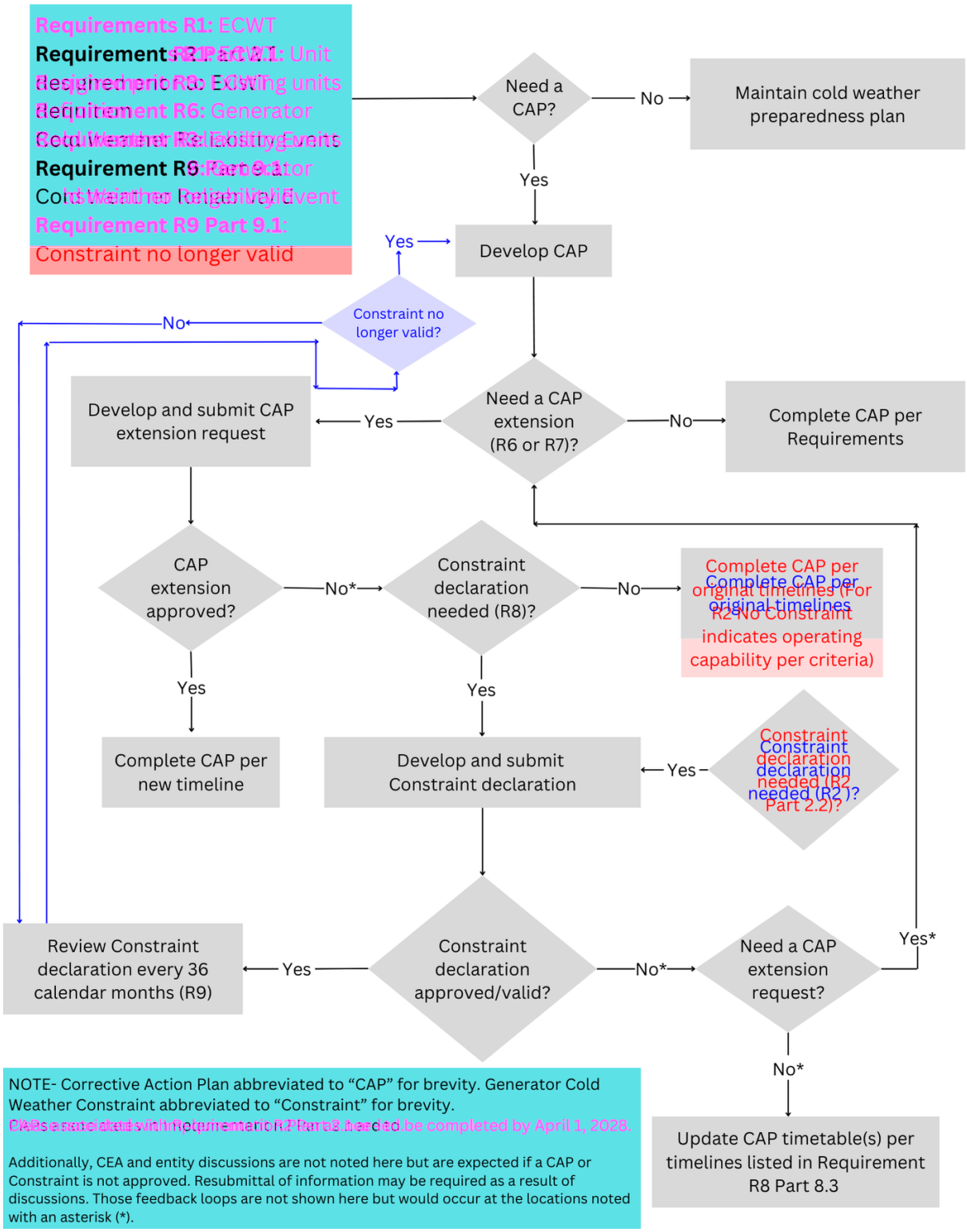
In all cases, when submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the GO must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the GO will apply. If a Generator Cold Weather Constraint declaration indicates that the application of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk-Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s), the documentation that defends and supports the constraint could properly include any assessment that the applicable functional entity (e.g., BA or RC) might agree to provide concerning the impact to the reliability of the Bulk-Power System if the constraint were to be deemed invalid by the CEA. Such an assessment, or other means of demonstrating agreement from an appropriate functional entity, would serve to strengthen the Generator Cold Weather Constraint declaration.

It should also be emphasized, as written in Attachment 1, that an approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the GO of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

With all Generator Cold Weather Constraints, it is the responsibility of the GO to provide supporting materials to facilitate approval and validation of the Generator Cold Weather Constraint by the ERO Enterprise. NERC staff has provided that additional guidance will be provided moving forward to support industry efforts in understanding the NERC Process. As mentioned in the Requirement R8 Technical Rational discussion, the NERC Process was developed to support the FERC directives in the June 2024 Order. The 2024-03 DT believes the new definition of Generator Cold Weather Constraint, updated language throughout the Standard with emphasis on Requirement R8, and the contents of Attachment 1 provide significant clarity to industry on what is expected for Generator Cold Weather Constraints to be considered valid.

(Modified graphics)

w is a graphical representation demonstrating the relationship between Requirements:



NOTE- Corrective Action Plan abbreviated to "CAP" for brevity. Generator Cold Weather Constraint abbreviated to "Constraint" for brevity.
CAPs associated with Requirement R2 Part 2.2 need to be completed by April 1, 2028.

Additionally, CEA and entity discussions are not noted here but are expected if a CAP or Constraint is not approved. Resubmittal of information may be required as a result of discussions. Those feedback loops are not shown here but would occur at the locations noted with an asterisk (*).

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Violation Risk Factor and Violation Severity Level Justifications

Project 2024-03 Revisions to EOP-012-2

This document provides the drafting team's (DT's) justification for assignment of violation risk factors (VRFs) and violation severity levels (VSLs) for each requirement in EOP-012-3. Each requirement is assigned a VRF and a VSL. These elements support the determination of an initial value range for the Base Penalty Amount regarding violations of requirements in FERC-approved Reliability Standards, as defined in the Electric Reliability Organizations (ERO) Sanction Guidelines. The DT applied the following NERC criteria and FERC Guidelines when developing the VRFs and VSLs for the requirements.

NERC Criteria for Violation Risk Factors

High Risk Requirement

A requirement that, if violated, could directly cause or contribute to Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

Medium Risk Requirement

A requirement that, if violated, could directly affect the electrical state or the capability of the Bulk Electric System, or the ability to effectively monitor and control the Bulk Electric System. However, violation of a medium risk requirement is unlikely to lead to Bulk Electric System instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor, control, or restore the Bulk Electric System. However, violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to Bulk Electric System instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

Lower Risk Requirement
A requirement that is administrative in nature and a requirement that, if violated, would not be expected to adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor and control the Bulk Electric System; or, a requirement that is administrative in nature and a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor, control, or restore the Bulk Electric System.

FERC Guidelines for Violation Risk Factors

Guideline (1) – Consistency with the Conclusions of the Final Blackout Report

FERC seeks to ensure that VRFs assigned to Requirements of Reliability Standards in these identified areas appropriately reflect their historical critical impact on the reliability of the Bulk-Power System (BPS). In the VSL Order, FERC listed critical areas (from the Final Blackout Report) where violations could severely affect the reliability of the BPS:

- Emergency operations
- Vegetation management
- Operator personnel training
- Protection systems and their coordination
- Operating tools and backup facilities
- Reactive power and voltage control
- System modeling and data exchange
- Communication protocol and facilities
- Requirements to determine equipment ratings
- Synchronized data recorders
- Clearer criteria for operationally critical facilities
- Appropriate use of transmission loading relief.

Guideline (2) – Consistency within a Reliability Standard
FERC expects a rational connection between the sub-Requirement VRF assignments and the main Requirement VRF assignment.

Guideline (3) – Consistency among Reliability Standards
FERC expects the assignment of VRFs corresponding to Requirements that address similar reliability goals in different Reliability Standards would be treated comparably.

Guideline (4) – Consistency with NERC's Definition of the Violation Risk Factor Level
Guideline (4) was developed to evaluate whether the assignment of a particular VRF level conforms to NERC's definition of that risk level.

Guideline (5) – Treatment of Requirements that Co-mingle More Than One Obligation
Where a single Requirement co-mingles a higher risk reliability objective and a lesser risk reliability objective, the VRF assignment for such Requirements must not be watered down to reflect the lower risk level associated with the less important objective of the Reliability Standard.

NERC Criteria for Violation Severity Levels

VSLs define the degree to which compliance with a requirement was not achieved. Each requirement must have at least one VSL. While it is preferable to have four VSLs for each requirement, some requirements do not have multiple "degrees" of noncompliant performance and may have only one, two, or three VSLs.

VSLs should be based on NERC's overarching criteria shown in the table below:

Lower VSL	Moderate VSL	High VSL	Severe VSL
The performance or product measured almost meets the full intent of the requirement.	The performance or product measured meets the majority of the intent of the requirement.	The performance or product measured does not meet the majority of the intent of the requirement, but does meet some of the intent.	The performance or product measured does not substantively meet the intent of the requirement.

FERC Order of Violation Severity Levels

The FERC VSL guidelines are presented below, followed by an analysis of whether the VSLs proposed for each requirement in the standard meet the FERC Guidelines for assessing VSLs:

Guideline (1) – Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance

Compare the VSLs to any prior levels of non-compliance and avoid significant changes that may encourage a lower level of compliance than was required when levels of non-compliance were used.

Guideline (2) – Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties

A violation of a "binary" type requirement must be a "Severe" VSL.
Do not use ambiguous terms such as "minor" and "significant" to describe noncompliant performance.

Guideline (3) – Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement

VSLs should not expand on what is required in the requirement.

Guideline (4) – Violation Severity Level Assignment Should Be Based on a Single Violation, Not on a Cumulative Number of Violations

Unless otherwise stated in the requirement, each instance of non-compliance with a requirement is a separate violation. Section 4 of the Sanction Guidelines states that assessing penalties on a per violation per day basis is the "default" for penalty calculations.

VRF Justification for EOP-012-3, Requirement R1

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R1			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for 5% or less of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 5%, but less than or equal to 10% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not calculate the Extreme Cold Weather Temperature or identify generating unit(s) cold weather data in accordance with Requirement R1 for more than 20% of its applicable units.

VSL Justifications for EOP-012-3, Requirement R1	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	There is a clarifying word change from “and” to “or” in all the VSL levels which did not have the unintended consequence of lowering the current level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R2

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R2			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for 5% or less of its applicable units. OR The Generator Owner did not declare a Generator Cold Weather Constraint (if applicable) to implement appropriate freeze protection measures for 5% or less of its applicable units.	The Generator Owner did not have freeze protection measure(s) for its applicable unit(s) meeting the criteria in Requirement R2 for more than 5%, but less than or equal to 10% of its applicable units. OR The Generator Owner did not declare a Generator Cold Weather Constraint (if applicable) for more than 5%, but less than or equal to 10% of its applicable units. units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 10%, but less than or equal to 20% of its applicable units. OR The Generator Owner did not declare a Generator Cold Weather Constraint (if applicable) for more than 10%, but less than or equal to 20% of its applicable units.	The Generator Owner did not have freeze protection measure(s) meeting the criteria in Requirement R2 for more than 20% of its applicable units. OR The Generator Owner did not declare a Generator Cold Weather Constraint (if applicable) for more than 20% of its applicable units.

VSL Justifications for EOP-012-3, Requirement R2	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	This requirement was modified to capture the difference for generating units for which the Generator Owner first contractually committed to design criteria relevant to this Requirement on or before/after June 29, 2023. The VSL was modified to add Generator Cold Weather Constraint and did not have the unintended consequence of lowering the current level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R3

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSL Justification for EOP-012-3, Requirement R3

The Drafting Team made non-substantial changes to this Requirement. The VSL did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VRF Justification for EOP-012-3, Requirement R4

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R4			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner implemented a cold weather preparedness plan(s) but failed to maintain it.	The Generator Owner's cold weather preparedness plan failed to include one of the applicable parts within Requirement R4.	The Generator Owner maintained a cold weather preparedness plan(s) but failed to implement it. OR The Generator Owner's cold weather preparedness plan failed to include two of the applicable requirement parts within Requirement R4.	The Generator Owner does not have a cold weather preparedness plan(s). OR The Generator Owner's cold weather preparedness plan failed to include three or more of the applicable requirement parts within Requirement R4.

VSL Justifications for EOP-012-3, Requirement R4	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The clarifying change in the High VSL to remove “had and” to align with the requirement language which did not have the unintended consequence of lowering the current level of compliance. There are no changes to other levels of the VSLs.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R5

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R5			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as described in Requirement R5 to the greater of: • one applicable personnel for a single generating unit; or • 5% or less of its total applicable personnel.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as described in Requirement R5 to the greater of: • two applicable personnel for a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as described in Requirement R5 to the greater of: • three applicable personnel for a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	The Generator Owner or Generator Operator failed to provide annual generating unit-specific training as described in Requirement R5 to the greater of: • four or more applicable personnel for a single generating unit; or • more than 15% of its total applicable personnel.

VSL Justifications for EOP-012-3, Requirement R5	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	There is a word change from “at” to “for” in reference to personnel supporting generating units in all the VSL which did not have the unintended consequence of lowering the current level of compliance. This edit clarifies that individuals needing unit-specific training may support many plant locations and not be specifically assigned at one plant. There are no changes to other levels of the VSLs.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R6

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R6			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 12 but fewer than 15 calendar months after the Generator Cold Weather Reliability Event.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 15 but fewer than 18 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirement R6, but it failed to contain one of the elements in Requirement R6, Part 6.3.	The Generator Owner conducted a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, but it was conducted more than 18 but fewer than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan where required under Requirements R6, but it failed to contain two of the elements in Requirement R6, Part 6.3. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable), but it did not include one of the required elements.	The Generator Owner failed to develop a Corrective Action Plan where required under Requirement R6. OR The Generator Owner developed a Corrective Action Plan where required under Requirement R6, but failed to implement it. OR The Generator Owner failed to conduct a review of applicability to freeze protection measures at other unit(s) owned by the Generator Owner in accordance with Requirement R6, Part 6.2, or the Generator Owner conducted the review, but it was conducted more than 24 calendar months after the Generator Cold Weather Reliability Event. OR The Generator Owner developed and implemented a Corrective Action Plan, but failed to contain

			three or more of the elements in Requirement R6, Part 6.3. OR The Generator Owner exceeded the timetables specified for completion in Requirement R6, Part 6.3.5, but did not submit a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.4 (if applicable). OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.4 (if applicable), but it did not include two or more of the elements in Requirement R6, Part 6.4.

VSL Justifications for EOP-012-3, Requirement R6	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	This requirement was modified to ensure that there is a process in place when developing and implementing Corrective Action Plans as well timelines on when Corrective Action Plans should be complete. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R7

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R7			
Lower	**Moderate**	**High**	**Severe**
N/A	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include a description of updates to the cold weather preparedness plan and identification of operating limits as required in Requirement R7, Parts 7.1.3 and 7.1.4.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include one of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include one of the required elements.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include two or more of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.2 (if applicable), but it did not include two or more of the required elements. OR The Generator Owner failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable). OR The Generator Owner failed to implement corrective action(s)

			identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) in accordance with Requirement R7 Part 7.3. OR The Generator Owner failed to complete corrective action(s) described in the Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) that preclude the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.

VSL Justifications for EOP-012-3, Requirement R7	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	This requirement was modified to ensure that each Generator Owner shall have dated evidence that demonstrates it implemented each Corrective Action Plan, including updating actions or timetables, or has explained in a declaration why corrective actions are not being implemented in accordance with Requirement R7. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R8

The VRF did not change from the previously FERC approved EOP-012-2 Reliability Standard.

VSLs for EOP-012-3, Requirement R8			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner declared a Generator Cold Weather Constraint and submitted it to the Compliance Enforcement Authority but it did not do so within the timeframe provided in Requirement R8 Part 8.1.	The Generator Owner declared a Generator Cold Weather Constraint, but failed to update its operating limitations as required under Requirement R8, Part 8.2 (if applicable).	The Generator Owner declared a Cold Weather Constraint, but failed to update its Corrective Action Plan following a determination by the Compliance Enforcement Authority that the constraint is invalid in accordance with Requirement R8 Part 8.3 (as applicable). OR The Generator Owner failed to document and provide the required notice to the CEA under Requirement R8 Part 8.4 (if applicable).	The Generator Owner declared a Generator Cold Weather Constraint but failed to submit it to the Compliance Enforcement Authority. OR The Generator Owner failed to implement freeze protection measures to provide the necessary capability in accordance with Requirement R8 Part 8.3.

VSL Justifications for EOP-012-3, Requirement R8	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The Drafting Team added Lower VSL and Moderate VSL to enforce that the Generator Owner should submit a Generator Cold Weather Constraint in accordance with Requirement R8, Part 8.1 within the specified timeframe and must comply with Requirement R8, Parts 8.2 through 8.3. An additional level in the high VSL was added to cover new language in Requirement R8 Part 8.4 that was added to the standard covering the scenario that would allow a Generator Owner to document a new Generator Cold Weather Constraint that under an existing Generator Cold Weather Constraint that was previously validated and provide notice to the Compliance Enforcement Authority. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for EOP-012-3, Requirement R9

VRF Justifications for EOP-012-3, Requirement R9	
Proposed VRF	**Lower**
NERC VRF Discussion	A VRF of Lower is appropriate due to the fact that reviewing each Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority at least once every 36 calendar months is administrative in nature. Failure to review the declaration in the timeframe would not under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor, control, or restore the bulk electric system. Therefore, it is consistent with the definition of a Lower VRF.
FERC VRF G1 Discussion Guideline 1- Consistency with Blackout Report	This VRF is consistent with the identified areas from the FERC list of critical areas in the Final Blackout Report.
FERC VRF G2 Discussion Guideline 2- Consistency within a Reliability Standard	This requirement has only a main VRF and no different sub-requirement VRFs.
FERC VRF G3 Discussion Guideline 3- Consistency among Reliability Standards	This VRF is consistent with other VRFs that address similar reliability goals in different Reliability Standards.
FERC VRF G4 Discussion Guideline 4- Consistency with NERC Definitions of VRFs	This VRF is consistent with the definition of a lower VRF requirement per the criteria filed with FERC as part of the ERO's Sanctions Guidelines.
FERC VRF G5 Discussion Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation	This requirement does not mingle a higher risk reliability objective and a lesser risk reliability objective. Therefore, the VRF reflects the risk of the whole requirement.

VSLs for EOP-012-3, Requirement R9			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 36 but fewer than 38 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 38 but fewer than 40 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 40 but fewer than 42 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was performed more than 42 calendar months after CEA validation or after the previous Generator Owner review. OR The Generator Owner failed to review a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9. OR The Generator Owner failed to develop or update a Corrective Action Plan where required by Requirement R9, Part 9.1 (if applicable).

VSL Justifications for EOP-012-3, Requirement R9	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The Drafting Team drafted Requirement R9 to enforce that the Generator Owner review a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid at least once every 36 months. If the constraint is no longer valid, Requirement R9, Part 9.1 requires the Generator Owner to develop or update a Corrective Action Plan pursuant to Requirement R7 within six (6) calendar months. The proposed VSLs do not have the unintended consequence of lowering the level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSLs are not binary and do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs use the same terminology as used in the associated requirement and are, therefore, consistent with the requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Directives from FERC June 2024 Order Approving EOP-012-2 and Directing Further Revisions

Project 2024-03 Revisions to EOP-012-2

Summary

This mapping document summarizes how the Project 2024-03 drafting team (DT), and the Standards Committee in carrying out its responsibilities under Section 321 of The North American Electric Reliability Corporation (NERC) Rules of Procedure, considered The Federal Energy Regulatory Commission's (FERC's) directives for further revisions to Reliability Standard EOP-012-2 in its June 27, 2024 approval order[1] when drafting proposed EOP-012-3.

Paragraph 47 – Address Ambiguities Regarding the term Generator Cold Weather Constraint and Criteria

Directive

"Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit to the Commission for approval modifications to proposed Reliability Standard EOP-012-2 that address concerns related to the ambiguity of the newly defined Generator Cold Weather Constraint term and criteria. Specifically, we direct NERC to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective *and* sufficiently detailed so that applicable entities understand what is required of them. One approach to satisfy this directive could be to incorporate into the proposed Reliability Standard a limited and discrete list of circumstances that would qualify as acceptable constraints. We note that NERC's technical rationale document, created by NERC's Standard Drafting Team(SDT) and included in NERC's filing, includes a list of technical constraints that could serve as a starting point for a list of circumstances that would qualify as acceptable constraints. To the extent that NERC continues to believe that the extent of industry adoption for winterization technologies should be a criterion for declaring a constraint, NERC should clearly explain in its filing how it will assess the extent of such adoption in a way that provides for consistent compliance and enforcement outcomes. Alternatively, NERC could establish a pre-approval process for all Generator Cold Weather Constraint declarations. While a clearly defined list may be preferable, a pre-approval

[1] *N. Am. Elec. Reliability Corp.*., 187 FERC ¶ 61,204 (2024) ("June 2024 Order"). In this document, internal citations included within the cited text of the FERC order are omitted.

process could be established to ensure entities' declared Generator Cold Weather Constraints are appropriate and can be supported and defended. Further, as part of the directive to develop and submit modifications to the Generator Cold Weather Constraint definition of proposed Reliability Standard EOP-012-2, we direct NERC, pursuant to section 215(d)(5) of the FPA, to remove the references to "cost," "reasonable cost," "unreasonable cost," and "good business practices" and replace them with criteria that are objective, unambiguous, and auditable. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
Generator Cold Weather Constraint - Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the criteria below. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include acceptable practices, methods, or technologies generally implemented by the electric industry in areas that experience similar winter climate conditions. Criteria used to determine a constraint include practices, methods, or technologies which, given the exercise of reasonable judgment in light of the facts known at the time the decision to declare the constraint was made: • Were not broadly implemented at generating units for comparable unit types in regions that	**Generator Cold Weather Constraint** - Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components. Freeze protection measures are not intended to be limited to optimum practices, methods, or technologies, but are also intended to include practices, methods, or technologies that would be expected to result in improved generating unit performance during cold temperatures. **** **R8.** Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: **8.1.** Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows:	Proposed EOP-012-3 along with the modified definition of Generator Cold Weather Constraint removes all of the references to "reasonable cost," "unreasonable cost," "cost," and "good business practices" consistent with the FERC directive. The definition of Generator Cold Weather Constraint now refers generally to a condition that would preclude implementing freeze protection measures, clarifying that freeze protection measures are not limited to just optimum solutions but any solution that may be effective for improving performance. Proposed EOP-012-3 adds Attachment 1, referenced in Requirement R8 and R9, to define the criteria by which a valid Generator Cold Weather Constraint may exist. Attachment 1 consists of:

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
experience similar winter climate conditions to provide reasonable assurance of efficacy; • Could not have been expected to accomplish the desired result; or Could not have been implemented at a reasonable cost consistent with good business practices, reliability, or safety. A cost may be deemed "unreasonable" when implementation of selected freeze protection measure(s) are uneconomical to the extent that they would require prohibitively expensive modifications or significant expenditures on equipment with minimal remaining life. *** **R8.** Each Generator Owner that creates a Generator Cold Weather Constraint declaration shall: **8.1**. Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and **8.2**. Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable.	• For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or • For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable. **8.2.** Update the operating limitations under Requirement R1 Part R1.2 if applicable; **8.3.** If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2;	1. Known Generator Cold Weather Constraints, consisting of circumstances which, if present and confirmed as valid by the Compliance Enforcement Authority, would constitute Generator Cold Weather Constraints; and 2. Case-by-case Determinations of Generator Cold Weather Constraints, consisting of situations which may constitute Generator Cold Weather Constraints, depending on the specific facts and circumstances. Only upon approval by the Compliance Enforcement Authority would these circumstances comprise a valid Generator Cold Weather Constraint under Requirement R8. Attachment 1 provides significant clarity on the conditions or issues that may constitute a valid Generator Cold Weather Constraint. The criteria are intended to be objective, unambiguous, and auditable. The standard retains flexibility to address potentially valid constraints that are not specifically defined in the standard through the Compliance Enforcement Authority review process. Please refer to the Technical Rationale for additional supporting information.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	8.4. Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event with the same cause of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause is addressed by an existing validated Generator Cold Weather Constraint for the same or a similar unit. **** **Attachment 1** (criteria for determining the applicability of a Generator Cold Weather Constraint) (*see standard*)	

Paragraph 54: Address Concerns Regarding the Need for a Timely Review and Evaluation of Declared Generator Cold Weather Constraints by NERC

Directive

"Accordingly, we again direct NERC, pursuant to section 215(d)(5) of the FPA, to modify proposed Reliability Standard so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner. We also direct NERC to include in its compliance filing, a plan to timely review such declarations to verify compliance with proposed Reliability Standard EOP-012-2 and its successors or obligations in a corrective action plan and take corrective action where necessary. For example, modifying Standard to require the generator owners to provide declarations (or changes to the declarations) to NERC within 45 days. It is up to NERC whether it would like to delegate this task to the relevant Regional Entities. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R8. Each Generator Owner that creates a Generator Cold Weather Constraint declaration shall: **8.1**. Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and **8.2**. Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable.	**R8.** Each Generator Owner that declares a Generator Cold Weather Constraint in accordance with Attachment 1 shall: **8.1.** Submit its Generator Cold Weather Constraint declaration(s) to the CEA as follows: • For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit within 15 calendar days after commercial operation; or	Requirement R8 would require the Generator Owner declaring a Generator Cold Weather Constraint in accordance with Attachment 1 to submit that constraint to its Compliance Enforcement Authority within 45 days of determining that a Generator Cold Weather Constraint is applicable (for new units, this time is within 15 days of entering commercial operation). This requirement helps ensure the timely submission of constraints to the Compliance Enforcement Authority, which may be NERC or the Regional Entity, for review and approval.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	• For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable. **8.2.** Update the operating limitations under Requirement R1 Part R1.2 if applicable; **8.3.** If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with Requirement R6 or Requirement R7, as applicable, subject to any extensions approved by the CEA, or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2; **8.4**. Document and provide notice to the CEA, when a generating unit experiences a Generator Cold Weather Reliability Event with the same cause of a previous Generator Cold Weather Reliability Event at the same or a similar unit, and one or more corrective actions to address the cause is addressed by an existing validated	Attachment 1 contains a list of known Generator Cold Weather Constraints as well as a list of situations, circumstances, and criteria that may constitute a Generator Cold Weather Constraint for which a Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply to the Compliance Enforcement Authority for approval. If the Generator Cold Weather Constraint is determined to be invalid by the Compliance Enforcement Authority, the Generator Owner must update its Corrective Action Plan and implement according to the standard timelines, beginning from the date of notification. As NERC and the Regional Entities are not users, owners, nor operators of the BPS, provisions for the timeliness of Compliance Enforcement Authority review are not included in EOP-012-3. Additional support and detail for how the Compliance Enforcement Authority will review constraints in a timely manner consistent with the FERC directive is provided in the Generator Cold Weather CAP Extension and Constraint Process.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	Generator Cold Weather Constraint for the same or a similar unit. **** **Attachment 1** (criteria for determining the applicability of a Generator Cold Weather Constraint) (*see standard*)	

Paragraph 68 - Address Concerns that Existing EOP-012-2 Requirement R7 Allows Too Long for Entities to Implement Corrective Actions for Existing or New Equipment or Freeze Protection Measures for those Generating Units that Experience a Generator Cold Weather Reliability Event

Directive

"Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event. Based on compliance with Requirements R2 and R3, those generating units should have already had appropriate freeze protection measures implemented to be capable of operating at the generating units' respective Extreme Cold Weather Temperature. Therefore, we find that a shorter timeframe to implement corrective actions that address existing or new equipment or freeze protection measures is appropriate. For example, to satisfy this directive, NERC could require generator owners to implement corrective actions prior to the next winter season for generating units that experience a Cold Weather Reliability Event and to complete freeze protection measures on similar equipment on all of its fleet within 24 months of becoming aware of the freeze issue. For corrective action plans that involve larger and more complicated implementations, NERC could incorporate a staggered 48-month corrective action plan implementation deadline."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R6. Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed	**R6.** Each Generator Owner shall, when experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop	To address this directive, proposed EOP-012-3 revises Requirement R6 to specify shorter implementation timeframes at generating units experiencing a Generator Cold Weather Event, and removes references to this requirement under Requirement R7, which previously addressed all Corrective Action Plans developed under the EOP-012-2 standard. For Generator Owners experiencing a Generator Cold Weather Event, Corrective Action Plans

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
within 150 days or by July 1, whichever is earlier, and contain at a minimum: **6.1.** A summary of the identified cause(s) for the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data; **6.2.** A review of applicability to similar equipment at generating units owned by the Generator Owner; and **6.3.** An identification of operating limitations or impacts to the cold weather preparedness plan that would apply until execution of the corrective action(s) identified in the Corrective Action Plan. **R7**. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, R3, or R6, shall: **7.1**. Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1**. List the action(s) which address(es) existing equipment or freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan; **7.1.2**. List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar months of completing development of the Corrective Action Plan; and	and implement a Corrective Action Plan(s) to address identified issues as follows: **6.1**. The Generator Owner shall develop a Corrective Action Plan for the generating unit that experienced a Generator Cold Weather Reliability Event no later than prior to the first day of the first December following the Generator Cold Weather Reliability Event.[Fn9] **6.2.** The Generator Owner shall conduct a review of the other generating unit(s) in its fleet with the same or similar equipment as the affected generating unit to determine if any of those generating unit(s) are susceptible to the identified freezing issues. If corrective actions are needed, the Generator Owner shall develop or update a Corrective Action Plan to address the other generating unit(s). This review and, if applicable, the development or update of any Corrective Action Plan(s), shall be completed no later than 12 calendar months following the Generator Cold Weather Reliability Event.	must specify implementation of corrective actions at the affected unit (i.e. the one experiencing the event) by no later than the first day of the first December following the event. For events occurring in September, October or November (i.e. prior to December 1), corrective actions shall be implemented prior to the first day of December in the following calendar year. The focus of revised EOP-012-3 Requirement R6 is on the timely completion of corrective actions addressing known freezing issues, rather than the timely development of the Corrective Action Plan document itself. However, for clarity, Requirement R6 Part 6.1 specifies that the Corrective Action Plan(s) itself must be developed by no later than the implementation deadline to ensure that identified issues and the corrective actions taken to address them are memorialized. Recognizing that similar units may be subject to similar issues, Generator Owners must perform a review of applicability to similar equipment at their other units. This review must be completed within 12 months of the Generator Cold Weather Reliability Event. Requirement R6 Part 6.3.5.2 would provide that entities must implement any corrective measures within 24 calendar months of completing this review, or

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
7.1.3. List the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; **7.2**. Implement the Corrective Action Plan in accordance with the specified timetables in Requirement R7 Part 7.1; **7.3**. Update the Corrective Action Plan action(s) and timetable(s), with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and **7.4**. Document in a declaration, with justification, any Generator Cold Weather Constraint that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.	**6.3.** For each Corrective Action Plan, the Generator Owner shall include at a minimum: **6.3.1.** A summary of the identified cause(s) of the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data; **6.3.2.** A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures; **6.3.3.** An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective action(s) identified in the Corrective Action Plan is completed; **6.3.4.** A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components	by no later than 36 months following the Generator Cold Weather Reliability Event. In developing these timelines, the drafting team and the Standards Committee considered multiple stakeholder comments suggesting that a 24-month timeline to implement corrective actions measured from the date of the event for similarly affected units would not be practical and may be unduly burdensome. The drafting team and the Standards Committee also considered the difficulties of defining, with specificity, the circumstances that would constitute "larger and more complicated implementations" – which FERC suggested may warrant a longer implementation period than provided in draft EOP-012-3 (e.g. 48 months compared to up to 36 months in EOP-012-3). To address these considerations, EOP-012-3 provides a uniform implementation period that incentivizes entities to understand the extent of condition across their fleets as soon as possible after the event and provides a definitive and reasonably expeditious timeline for completion. To the extent circumstances beyond the control of the Generator Owner prevent implementation within these timeframes, Requirement R6 Part 6.4 provides a process by which the Generator Owner may seek an

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	and their freeze protection measures, if required; and **6.3.5.** A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows **6.3.5.1.** For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event. [Fn10] **6.3.5.2.** For other generating unit(s) owned by the Generator Owner, within 24 calendar months of completing the review required in Part 6.2, or no later than 36 months following the Generator Cold Weather Reliability Event. **6.4** If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances	extension from the Compliance Enforcement Authority. This process is similar to that included in Requirement R7, discussed more fully in the following section. This provision addresses those larger and more complicated implementations for which even an up to 36 months implementation deadline may not be feasible.

Consideration of Directive in EOP-012-3		
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	beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA) for approval. The submitted Corrective Action Plan extension request shall include the following: **6.4.1.** An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner; **6.4.2.** Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and **6.4.3.** Updated timetable for implementing the selected actions in Part 6.3.2. **6.5** The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, as applicable.	

Consideration of Directive in EOP-012-3		
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	[Fn9/Fn10]: For events that occur in September, October or November, the timetable shall specify completion prior to December 1 of the following calendar year. **** **R7.** Each Generator Owner that is required to develop a Corrective Action Plan under Requirements R1, R3, or R9 shall develop and implement the Corrective Action Plan in accordance with the following:	

Paragraph 70: Address the Finding that Any Extensions of a Corrective Action Plan Implementation Deadline Beyond the Maximum Implementation Timeframe Provided by the Standard be Pre-Approved by NERC

Directive

"Therefore, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC. This approach is consistent with prior Commission action in Order No. 851 where the Commission directed NERC to require pre-approval for extensions beyond the timelines required in the Reliability Standard. In Order No. 851, the Commission explained that although case-by-case extension determinations may be more uncertain or have associated burdens, the more compelling imperative is that automatic extensions have the potential for abuse by unduly delaying mitigation, and would lead to delayed visibility for NERC."

See also P 3 (summarizing directives): "[W]e direct NERC to:… develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the Standard is pre-approved by NERC and to ensure that the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R6. Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), develop a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability	**6.4** If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority for	To address this directive, proposed EOP-012-3 adds new Requirement R6, Part 6.4, and Requirement R7 Part 7.2 to require any Generator Owner seeking to extend a Corrective Action Plan implementation deadline beyond the maximum implementation timeframe required by the standard seeks pre-approval of the extension by the Compliance Enforcement Authority. This language is similar to that used in

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
Event. The Corrective Action Plan shall be developed within 150 days or by July 1, whichever is earlier, and contain at a minimum: **6.1.** A summary of the identified cause(s) for the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data; **6.2.** A review of applicability to similar equipment at generating units owned by the Generator Owner; and **6.3.** An identification of operating limitations or impacts to the cold weather preparedness plan that would apply until execution of the corrective action(s) identified in the Corrective Action Plan. **** **R7**. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, R3, or R6, shall: **7.1**. Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1**. List the action(s) which address(es) existing equipment or freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan; **7.1.2**. List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar	approval. The submitted Corrective Action Plan extension request shall include the following: **6.4.1.** An explanation of the circumstances causing the delay and why those circumstances are beyond the control of the Generator Owner; **6.4.2.** Revisions to the selected actions in Part 6.3.2, if any, including utilization of operating procedures, if applicable; and **6.4.3.** Updated timetable for implementing the selected actions in Part 6.3.2. **** **7.1.** For each Corrective Action Plan, the Generator Owner shall include at a minimum the following: *** **7.1.4.** An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until implementation of the corrective	the TPL-007 standard, and the ERO Enterprise would follow a similar review process. With respect to that part of Paragraph 3 relating to "ensuring the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension": Under EOP-012-3 Requirement R6 Part 6.3.3, pertaining to units experiencing a Generator Cold Weather Event, the Generator Owner would be required to identify operating limitations that would apply until execution of the Corrective Action Plan. Under EOP-012-3 Requirements R2 and R3, a Corrective Action Plan would be required where the Generator Owner cannot meet the required operational capability for its unit. Requirement R7 Part 7.1 addresses what generators must include in their Corrective Action Plans, including operating limitations that apply until implementation of the corrective actions is completed (Part 7.1.4). The TOP-003 and IRO-010 standards require the Transmission Operator, Balancing Authority, and Reliability Coordinator to maintain data specifications for their real-time and operational

Consideration of Directive in EOP-012-3		
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months of completing development of the Corrective Action Plan; and **7.1.3**. List the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures; **7.2**. Implement the Corrective Action Plan in accordance with the specified timetables in Requirement R7 Part 7.1; **7.3**. Update the Corrective Action Plan action(s) and timetable(s), with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and **7.4**. Document in a declaration, with justification, any Generator Cold Weather Constraint that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.	action(s) identified in the Corrective Action Plan is completed. **7.2.** If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan in accordance with the timetables specified in Requirement R7 Part 7.1 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following: **7.2.1.** An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner; **7.2.2.** Revisions to the selected actions in Parts 7.1, if any, including utilization of operating procedures, if applicable; and **7.2.3.** Updated timetable for implementing the selected actions in Part 7.1.	planning analyses that include provisions for notification of BES generating unit(s) status during local forecasted cold weather to include operating limitations based on capability and availability, among other factors. These standards require the Generator Owner to provide the requested data. Additionally, other mechanisms that reliability entities have for obtaining up-to-date information on the status and availability of generators was discussed during the development process. It was also considered that, under Reliability Standard TOP-002-5 Requirement R8, each Balancing Authority is required to have an extreme cold weather Operating Process that takes into consideration capability and availability concerns, considering generating operating limitations from previous cold weather periods. After considering these standards, it was determined that no additional requirement would be needed to ensure the “generator owner informs relevant registered entities of operating limitations in extreme cold weather” specifically during the period of Corrective Action Plan extension. Operating limitations should be communicated through other mechanisms regardless of whether those

Consideration of Directive in EOP-012-3		
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		operating limitations apply generally, during the time period provided in the Corrective Action Plan for implementation, or the period provided authorized by the CEA for an extension. To the extent a Transmission Operator, Balancing Authority, or Reliability Coordinator would find the additional detail useful (i.e. that the operating limitation applies during a Corrective Action Plan extension), it may request this information as part of its data specifications, and the Generator Owner would be required to provide it. However, a requirement in EOP-012-3 for the Generator Owner to provide this information through a separate mechanism, absent a communicated need, may not provide any reliability benefit.

Paragraph 72: Address the Finding that Generators that are First Commercially Operational on or after October 1, 2027, Should Have Freeze Protection Measures Either Designed into Their Generating Systems, or, if a Corrective Action Plan is Needed, then It Should be Completed by the Time that Such Generating Units Go into Commercial Operation.

Directive

"We thus find that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to clarify that any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R2. Applicable to generating units with a commercial operation date on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), shall: • Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum	**R2.** Applicable to generating units that begin commercial operation on or after October 1, 2027[fn2]: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius), shall: • Implement freeze protection measures to protect Generator Cold Weather Critical Components that provide the capability to operate at the generating unit(s)'	To address this directive, proposed EOP-012-3 revises Requirement R2 which pertains to units going into commercial operation after October 1, 2027. Requirement R2 would require that a Generator Owner with a generating unit entering commercial operation on or after October 1, 2027 shall either implement the required capability or declare a Generator Cold Weather Constraint, if applicable. A new footnote is added to clarify that the October 1, 2027 date may be different in non-U.S. jurisdictions.

Consideration of Directive in EOP-012-3		
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operational duration for intermittent energy resources if less than twelve (12) continuous hours; or • Develop a Corrective Action Plan(s) to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours.	Extreme Cold Weather Temperature with sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours; or • Document in a declaration, with justification, if applicable, a Generator Cold Weather Constraint in accordance with Requirement R8. [fn2]: In non-U.S. jurisdictions, this will be the date established by the Applicable Governmental Authority.	There is no requirement to implement a Corrective Action Plan prior to entering commercial operation, as there were concerns raised about potential retroactive applicability of such a requirement (i.e. applying standards prior to registration for mandatory compliance purposes). However, the practical effect is the same: the entity must either implement the required capability or delay its commercial operation date until it is able to do so. Prior EOP-012 drafting teams believed that there needs to be allowances made for units that are far along in the development process, but do not expect to achieve commercial operation prior to October 1, 2027. It was discussed that some plants may take five years or more to complete construction and enter commercial operation, with significant investments in design occurring early in the process. After a certain point, changing such designs (if allowed) may subject the entity to significant added costs, delays, or both. While not changing the October 1, 2027 date as the date after which new units must meet the more stringent requirements for new generation, the implementation plan for proposed EOP-012-3 provides a slightly longer

Consideration of Directive in EOP-012-3		
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		phased-in compliance deadline for units meeting certain criteria. This phased-in compliance date would help accommodate the units that are thought to be much further along in the process of development and for whom the revised requirement might represent a significant hardship, while overall raising the bar for reliability. . Additional information and background are available in the Technical Rationale for proposed EOP-012-3.

Paragraph 76: To Address Concerns that EOP-012-2 Requirement R7 has Ambiguities in the Implementation Plan Timelines that Apply to Certain Generator Owners

Directive

"We believe that proposed Reliability Standard EOP-012-2, Requirement R7's corrective action plan implementation deadlines have remaining ambiguities that need to be addressed. As noted above, the Commission has previously expressed similar concerns regarding the vagueness and enforceability of Reliability Standards language. Specifically, we agree with the concerns raised by the ISO/RTO Council that Requirement R7 of proposed Reliability Standard EOP-012-2 does not provide clear direction as to the required corrective action plan implementation timeline that applies to certain generator owners. For example, it is unclear how the corrective action plan implementation timeline would apply if a generator owner had combinations of both existing and new equipment for freeze protection measures. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to address these ambiguities by expanding on Requirement R7.1.1 and 7.1.2 to make it clear which corrective action plan implementation deadline applies to which generator owner."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R7. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, R3, or R6, shall: **7.1**. Include a timetable for implementing the selected corrective action(s) that shall: **7.1.1**. List the action(s) which address(es) existing equipment or freeze protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan; **7.1.2**. List the action(s) which require(s) new equipment or freeze protection measures, if any, to be completed within 48 calendar	**6.3.5.** A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows **6.3.5.1.** For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event.[fn10] **6.3.5.2.** For other generating unit(s) owned by the Generator Owner,	To address this directive, proposed EOP-012-3 includes Corrective Action Plan timelines in Requirement R6 Part 6.3.5 for Corrective Action Plans developed due to experiencing a Generator Cold Weather Reliability Event which require corrective actions be completed no later than the first day of the first December following the event. For events occurring early in the season (i.e. prior to December 1), corrective actions shall be implemented prior to December 1 of the next calendar year following the event.

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
months of completing development of the Corrective Action Plan; and **7.1.3**. List the updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures;	within 24 calendar months of completing the review required in Part 6.2, or no later than 36 months following the Generator Cold Weather Reliability Event. **** **R7.** Each Generator Owner that is required to develop a Corrective Action Plan under Requirements R1, R3, or R9 shall develop and implement the Corrective Action Plan in accordance with the following: **7.1.** For each Corrective Action Plan, the Generator Owner shall include at a minimum the following: **7.1.1.** A list of any actions that require new freeze protection measures, with a timetable specifying completion of such measures within 48 calendar months of completing development of the Corrective Action Plan; **7.1.2.** A list of any actions that remedy issues with existing freeze protection measures with a timetable specifying completion of such measures within 24 calendar months of	Recognizing that similar units may be subject to similar issues, Generator Owners must perform a review of applicability to similar equipment at their other units. Revised Requirement R6 Part 6.3.5.2 would allow the entity to perform this review within 12 calendar months and implement any corrective measures within 24 calendar months of completing this review, or no later than 36 months following the Generator Cold Weather Reliability Event. These revisions provide enhanced specificity regarding the timelines for completing corrective actions in a Corrective Action Plan, with more urgent deadlines to address freezing issues that were identified following a reliability event. Additionally in Requirement R7 Part 7.1.2, the phrase “regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures” was added to clarify that actions to address issues with existing freeze protection measures must still be completed within 24 months, even if separate actions to implement new freeze protection measures have a longer timeframe. Additional information regarding what may be considered a “new” freeze protection measure and what may be considered an “existing” freeze protection measure is provided in the

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	completing development of the Corrective Action Plan (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures); ***	Technical Rationale. In summary, if there is a failure of a freeze protection measure (e.g., heat trace) and that freeze protection measure is replaced with the same/similar/commonly used technology, that would be considered "existing". Similarly, replacing a component of an existing system would be considered addressing issues with "existing" freeze protection measures. Examples of "new" freeze protection measures may include new permanent structures or new technologies not already applied. It is thought that the industry generally understands the distinction between "new" and "existing" in this context, but the additional support in the Technical Rationale should further clarify the matter consistent with the FERC directive and help ensure that the longer timeframes are only used where appropriate to the scope of work required for implementation.

Paragraph 94: To address the concern that Generator Cold Weather Constraint Declarations Should be Reviewed More Frequently than Once Every Five Years to Ensure the Constraint Remains Valid

Directive

"We agree with the ISO/RTO Council that the proposed five-year review period for the declared Generator Cold Weather Constraints in Requirement R8.1 could delay the identification and adoption of new freeze protection measures and does not represent the current pace of technological advancements. We acknowledge that a more frequent review does impose some additional administrative burden to the generator owner to review the technological advancements that hindered its ability to winterize; nonetheless, a lengthy period between a Generator Cold Weather Constraint declaration review by the generator owner offers little incentive to timely adopt new freeze protection technologies. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R8, Part 8.1 of proposed Reliability Standard EOP 012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations to verify that the declaration remains valid. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns."

Consideration of Directive

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
R8. Each Generator Owner that creates a Generator Cold Weather Constraint declaration shall: **8.1**. Review the Generator Cold Weather Constraint declaration at least every five calendar years or as needed when a change of status to the Generator Cold Weather Constraint occurs; and **8.2**. Update the operating limitations associated with capability and availability under Requirement R1 Part R1.2 if applicable.	**R9.** The Generator Owner shall review each Generator Cold Weather Constraint declaration validated by the CEA at least once every 36 calendar months to determine if it remains valid in accordance with Attachment 1. **9.1** If a Generator Cold Weather Constraint is determined to be no longer valid, then within six (6) calendar months of such determination, the Generator Owner shall develop or update a Corrective	To address this directive, proposed EOP-012-3 adds Requirement R9 to require review of all validated Generator Cold Weather Constraints at least once every 36 calendar months to ensure the constraint remains valid. Language regarding reviews "as needed when a change of status" occurs was removed due to the more frequent periodicity. This timeline was based on consideration of stakeholder comments regarding the optimal timeframe for such reviews, considering the pace that new technologies are brought to market. By shortening from five calendar years, the 36

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
	Action Plan pursuant to Requirement R7. **** **Attachment 1** (criteria for determining the applicability of a Generator Cold Weather Constraint) (*see draft standard*)	calendar month timeline provides a reasonable approach to meeting the Commission's directives without creating undue administrative burden to periodically monitor if Generator Cold Weather Constraints remain valid or if new technologies have become available that effectively obviate the originally validated constraint. Part 9.1 clarifies the Generator Owner's obligations in the event the constraint is determined to be no longer valid. For example, a new freeze protection technology is developed that would address the issue, or circumstances change such that the implementation of an existing measure would no longer cause the plant to retire prematurely. The Generator Owner must then develop or update an existing Corrective Action Plan to specify implementation of the freeze protection measures according to the timelines provided in Requirement R7, along with the other required elements. This provision helps ensure that entities are taking timely action, if circumstances change, such that a constraint is no longer appropriate under the standard. If an entity determines that another category of Generator Cold Weather Constraint would apply based on the facts and circumstances, it may declare that constraint and submit it to the

Consideration of Directive in EOP-012-3		
Approved Definition/Standard	**Revisions in Definition/Standard or Other Action**	**Description and Change Justification**
		Compliance Enforcement Authority for review as if it were a new constraint.

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NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

EOP-012-3

Generator Cold Weather CAP Extension and Constraint Process

Purpose

This Electric Reliability Organization (ERO) Generator Cold Weather Corrective Action Plan (CAP) Extension and Constraint Process document addresses how ERO Enterprise staff will review generator cold weather CAP extensions and Constraints developed under Reliability Standard EOP-012-3 Requirements and Attachment 1. The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.

NERC Compliance Assurance & Certification will maintain this document under existing ERO Enterprise processes. This document will be reviewed and updated by NERC Compliance Assurance & Certification, as needed. Notification to industry on changes will occur through The North American Electric Reliability Corporation's (NERC's) normal public posting and industry announcements to maintain industry awareness. The steps outlined here will help to ensure a timely, structured, and consistent approach to CAP extension request and Generator Cold Weather Constraint submittals and processing.

Each Compliance Enforcement Authority (CEA) is responsible for providing staff to facilitate timely processing in a consistent manner. NERC Compliance Assurance & Certification will provide training, oversight, and guidance, as needed, for successful implementation of this process. A templated submittal form as well as guidance on materials that support timely and consistent processing will be provided in the appropriate format (e.g., training, outreach, guides, etc.).

CAP Extension Request Review Process

Process Overview

If a registered entity has determined that a CAP developed in accordance with EOP-012-3 Requirements R6 or R7 cannot meet the timetable provided per R6 Part 6.3 or R7 Part 7.1, then the entity will submit an extension request to the ERO Enterprise for approval no less than 60 calendar days prior to the original required CAP completion date[1]. It is the Generator Owner's (GO's) obligation and responsibility to provide clear documentation with the extension request in a timeframe that allows the ERO Enterprise to process the request effectively.

The entity will work with the Regional Entity designated as its CEA as outlined in this process. The entity submitting the extension request will be referred to as the 'submitting entity' and may represent only itself or multiple registered entities who have developed a joint extension request[2]. The submitting entity is

[1] The ERO Enterprise is aware that in certain situations the submittal timeframes may not be met due to circumstances beyond the control of a Generator Owner. The ERO Enterprise will prioritize efforts to help ensure timely processing of extension requests as these circumstances arise.

[2] As a single Corrective Action Plan may be developed for multiple sites and multiple entities, a Corrective Action Plan extension request may be done in a similar manner.

responsible for ensuring all registered entities jointly submitting the extension request are listed in the requested information below and for distributing any communications from its CEA to the other entities that are part of the joint extension request. If a joint extension request is submitted for multiple registered entities who have different Regional Entities designated as the CEA, the submitting entity's CEA will perform the steps outlined in this process and will be responsible for coordinating with the Regional Entity(ies) that are the designated CEA for the additional entities party to the joint extension request.

For entities in Coordinated Oversight, the CEA for this process is the Lead Regional Entity (LRE). The LRE will coordinate with the Affected Regional Entity(ies) (ARE) and the AREs may participate in the joint review as well.

Step 1 – Registered Entity Submittal

If an entity determines that it cannot meet the required timetable for completing a CAP, the submitting entity will submit the requisite data to their CEA through Align and the Secure Evidence Locker (SEL) or other process tools as directed by the CEA. It is expected that data will be marked in accordance with Section 1500 of the Rules of Procedure in a similar manner to the evidence provided during a Compliance Audit.

Entities are encouraged to submit the extension request as soon as they are aware they will not meet the CAP completion date, but no later than 60 calendar days before the original required completion date. The 60-day timeframe provides the submitting entity and the CEA sufficient time to have discussions, as needed, prior to the required completion date. It is the submitting entity's responsibility to ensure that all information detailed in EOP-012-3 Part 6.4 or Part 7.2 and requested in Align is provided in the entity's extension request to facilitate the review.

Step 2 – ERO Enterprise Review

The CEA will acknowledge receipt of the submission in writing (either through Align or email) within 15 calendar days and verify that all information detailed in EOP-012-3 Part 6.4 or Part 7.2 is provided in the submittal. The CEA will work with the submitting entity to provide any missing information. The CEA will notify NERC of the extension request submittal and provide all associated information when acknowledging receipt of the submission.

The CEA will then perform a review[3] of (1) the circumstances beyond the control of the entity preventing implementation of the CAP within the identified timetable; (2) the revisions to the selected actions in the CAP; and (3) the updated timetable for implementing the selected actions. Any additional information requested to support the extension request review will be coordinated with the submitting entity by the CEA. The CEA will complete the review within 45 calendar days of acknowledgement or provide notification to the submitting entity that they are extending the time needed for review.

Examples of circumstances beyond the control of the responsible entity include, but are not limited to[4]:

[3] NERC may choose to participate in any review at its own discretion or at the request of the CEA.

[4] The list provided is not exhaustive. Clear explanation of the facts and circumstances that demonstrate "beyond the control" is needed. The concept of "beyond the control" is also used in Reliability Standards FAC-003 Requirements R1 and R7, PRC-004 Requirement R5, TPL-001-5.1 Requirement R2, and TPL-007 Requirements R7 and R11.

- Delays resulting from regulatory/legal processes, such as permitting.
- Delays resulting from stakeholder processes required by tariff.
- Delays resulting from equipment lead times; or
- Delays resulting from unit outages being denied.

Due diligence (i.e., reasonable steps taken) in ordering equipment, obtaining permits, scheduling outages, etc., will be considered as part of the determination of whether a particular set of facts constitute circumstances beyond the control of the entity.

Step 3 – Registered Entity Notification

The CEA will communicate the approval or denial of the extension request or continuation of the time needed to review the extension request in writing to the submitting entity including the rationale for the determination. For any continuation of the review, the CEA will also provide the submitting entity with a revised timeline for when the determination will be provided. If an extension request is denied, the selected actions in the CAP need to be completed in accordance with the original timetables.

If a CAP extension request was denied, the submitting entity may request, within 15 calendar days of denial, a joint NERC and CEA review of the denial. The joint review should take no longer than 10 calendar days (subject to the information and resources available.) NERC and the CEA will evaluate the information provided and the submitting entity will be notified of the determination.

Step 4 – Reporting to NERC

Quarterly, the CEA will provide NERC with a report that, at a minimum, includes each extension request, whether the request was approved or denied, and the CEA's rationale for its decision. NERC will periodically provide trending and analysis of aggregated anonymized CAP extension requests for industry awareness and guidance.

Constraint Review Process

Process Overview

If a registered entity has determined that a Generator Cold Weather Constraint, developed in accordance with Reliability Standard EOP-012-3 Attachment 1, exists, the entity will work with the Regional Entity designated as its CEA to submit the Generator Cold Weather Constraint, with supporting documentation, to the CEA for review, evaluation, and validation or approval as outlined in this process.

The entity submitting the Generator Cold Weather Constraint(s) will be referred to as the 'submitting entity' and may represent itself or multiple registered entities under the same ownership with the same Generator Cold Weather Constraint. The submitting entity is responsible for ensuring all registered entities included are listed in the requested information and is for distributing any communications from its CEA to the other entities that are part of the Generator Cold Weather Constraint. If a Generator Cold Weather Constraint is submitted for multiple registered entities under the same ownership who have different Regional Entities designated as the CEA, the submitting entity's CEA will perform the steps outlined in this process and will

be responsible for coordinating with the Regional Entity(ies) that are the designated CEA for the additional entities party to the Generator Cold Weather Constraint.

For entities in Coordinated Oversight, the CEA for this process is the Lead Regional Entity (LRE). The LRE will coordinate with the Affected Regional Entity(ies) (ARE) and the AREs may participate in the joint review as well.

Step 1 – Registered Entity Submittal

If an entity determines that it meets the required Generator Cold Weather Constraint language within Attachment 1, the submitting entity will submit the requisite data to their CEA through Align and the Secure Evidence Locker or other process tools as directed by the CEA. It is expected that data will be marked in accordance with Section 1500 of the Rules of Procedure in a similar manner to the evidence provided during a Compliance Audit.

Entities are encouraged to submit the Generator Cold Weather Constraint as soon as they are aware they will meet the Generator Cold Weather Constraint language within Attachment 1 but are required to meet EOP-012-3 Requirement R8[5]. Early submittal is requested to allow the CEA time to review, evaluate, and validate or approve the Generator Cold Weather Constraint.

If an entity determines a Generator Cold Weather Constraint is required for a unit, then subsequently has another unit that requires declaration of the same Generator Cold Weather Constraint (e.g., the same issue occurred at another location with implementing a freeze protection measure) an update to the original Generator Cold Weather Constraint is allowed. Note that supporting information for the other site is needed and the submittal/review timelines (per Requirement R8 and this process) will remain the same for the "new" addition. This will allow a GO to perform the 36-calendar month review of the Generator Cold Weather Constraint for both instances at the same time.

It is the submitting entity's responsibility to ensure that all information detailed in EOP-012-3 R8 and Attachment 1 is provided in the entity's submittal to facilitate the CEA review. The submitting entity should review language within Attachment 1 and identify, in the submittal, if the Generator Cold Weather Constraint is a known Generator Cold Weather Constraint or a Generator Cold Weather Constraint requiring further review for approval.

Step 2 – ERO Enterprise Review

The CEA will acknowledge receipt of the submission in writing (either through Align or email) within 15 calendar days and verify that all information detailed in EOP-012-3 R8 and Attachment 1 is provided in the submitting entity's submittal. The CEA will work with the submitting entity to provide any missing information. The CEA will notify NERC of the Generator Cold Weather Constraint submittal (either through Align or via email) when acknowledging receipt of the submission. Indication of the Generator Cold Weather

[5] Per EOP-012-3 R8.1, the Generator Owner must submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable for in-service units. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, the Generator Owner must submit the Generator Cold Weather Constraint declaration(s) no later than 15 calendar days after commercial operation.

Constraint type (e.g., "Known" or "Case-by-Case") will be included in the notification to ensure NERC has sufficient visibility and oversight in the process.

The CEA will review the Generator Cold Weather Constraint submittal and supporting information[6]. Any additional information requested to support the Generator Cold Weather Constraint review, evaluation, and validation or approval will be coordinated with the submitting entity by the CEA. The CEA will complete the review within 10 calendar days of submittal receipt confirmation for known Generator Cold Weather Constraint and 45 calendar days of submittal receipt confirmation for those Generator Cold Weather Constraint requiring further review for approval or provide notification to the submitting entity that they are extending the time needed to review[7].

The determination whether to approve the case-by-case Generator Cold Weather Constraint will be based on the specific facts and circumstances provided by the submitting entity that defends and supports the declared constraint under the identified situations in EOP-012-3 Attachment 1.

Step 3 – Registered Entity Notification

The CEA will communicate the validation, approval, or denial of the Generator Cold Weather Constraint or continuation of the time needed to review the Generator Cold Weather Constraint in writing (via Align or email) to the submitting entity including the rationale for the determination. For any continuation of the review, the CEA will also provide the submitting entity with a revised timeline for when the determination will be provided. Denial of a Generator Cold Weather Constraint requires the entity to update its CAPs with corrective actions that will be completed within the timetables in Requirement R6 Part 6.3 or Requirement R7 Part 7.1 to begin from the date the GO is notified that the Generator Cold Weather Constraint is invalid. Communication efforts between the submitting entity and the CEA related to updates of the CAP and timetables resulting from a denial of a Generator Cold Weather Constraint are strongly encouraged.

If a Generator Cold Weather Constraint was denied, the submitting entity may request, within 15 calendar days of denial, a joint NERC and CEA review of the denial. The joint review should take no longer than 10 calendar days (subject to the information and resources available.) NERC and the CEA will evaluate the information provided and the submitting entity will be notified of the determination.

Step 4 – Reporting to NERC

Quarterly, the CEA will provide NERC with a report that, at a minimum, includes each Generator Cold Weather Constraint request received, whether the request was validated, approved, or denied, and the CEA's rationale for its decision. NERC will periodically provide trending and analysis of aggregated anonymized Generator Cold Weather Constraint declarations for industry awareness and guidance.

[6] NERC may choose to participate in any review at its own discretion or at the request of the CEA.

[7] If a large number of entities submit Generator Cold Weather Constraints at the same time (especially those tied to initial performance expectations as set in the EOP-012-3 Implementation Plan), the ERO Enterprise anticipates additional time will be needed to accommodate these initial reviews.

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NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

EOP-012-3

Generator Cold Weather CAP Extension and Constraint Process

~~Background~~Purpose

This Electric Reliability Organization (ERO) Generator Cold Weather Corrective Action Plan (CAP) Extension and Constraint Process document addresses how ERO Enterprise staff will review generator cold weather CAP extensions and Constraints developed under Reliability Standard EOP-012-3 Requirements and Attachment 1. The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.

NERC Compliance Assurance & Certification will maintain this document under existing ERO Enterprise processes. This document will be reviewed and updated by NERC Compliance Assurance & Certification, as needed. Notification to industry on changes will occur through The North American Electric Reliability Corporation's (NERC's) normal public posting and industry announcements to maintain industry awareness. The steps outlined here will help to ensure a timely, structured, and consistent approach to CAP extension request and Generator Cold Weather Constraint submittals and processing.

Each Compliance Enforcement Authority (CEA) is responsible for providing staff to facilitate timely processing in a consistent manner. NERC Compliance Assurance & Certification will provide training, oversight, and guidance, as needed, for successful implementation of this process. A templated submittal form as well as guidance on materials that support timely and consistent processing will be provided in the appropriate format (e.g., training, outreach, guides, etc.).

CAP Extension Request Review Process

Process Overview

If a registered entity has determined that a ~~Corrective Action Plan (~~CAP~~)~~ developed in accordance with EOP-012-3 Requirements R6 or R7 cannot meet the timetable provided per R6 Part 6.3 or R7 Part 7.1, then the entity will submit an extension request to the ERO Enterprise for approval no less than 60 calendar days prior to the original required CAP completion date[1]. It is the Generator Owner's (GO's) obligation and responsibility to provide clear documentation with the extension request in a timeframe that allows the ERO Enterprise to process the request effectively.

The entity will work with the Regional Entity designated as its ~~Compliance Enforcement Authority (~~CEA~~)~~ as outlined in this process. The entity submitting the extension request will be referred to as the 'submitting entity' and may represent only itself or multiple registered entities who have developed a joint extension

[1] The ERO Enterprise is aware that in certain situations the submittal timeframes may not be met due to circumstances beyond the control of a Generator Owner. The ERO Enterprise will prioritize efforts to help ensure timely processing of extension requests as these circumstances arise.

request[2]. The submitting entity is responsible for ensuring all registered entities ~~who are~~ jointly submitting the extension request are listed in the requested information below and for distributing any communications from its CEA to the other entities that are part of the joint extension request. If a joint extension request is submitted for multiple registered entities who have different Regional Entities designated as the CEA, the submitting entity's CEA will perform the steps outlined in this process and will be responsible for coordinating with the Regional Entity(ies) that are the designated CEA for the additional entities party to the joint extension request.

For entities in Coordinated Oversight, the CEA for this process is the Lead Regional Entity (LRE). The LRE will coordinate with the Affected Regional Entity(ies) (ARE) and the AREs may participate in the joint review as well.

Step 1 – Registered Entity Submittal

If an entity determines that it cannot meet the required timetable for completing a CAP, the submitting entity will submit the requisite data to their CEA through Align and the Secure Evidence Locker (SEL) or other process tools as directed by the CEA. It is expected that data will be marked in accordance with Section 1500 of the Rules of Procedure in a similar manner to the evidence provided during a Compliance Audit.

Entities are encouraged to submit the extension request as soon as they are aware they will not meet the CAP completion date, but no later than 60 calendar days before the original required completion date. The 60-day timeframe provides the submitting entity and the CEA sufficient time to have discussions, as needed, prior to the required completion date. It is the submitting entity's responsibility to ensure that all information detailed in EOP-012-3 Part 6.4 or Part 7.2 and requested in Align is provided in the entity's extension request to facilitate the review.

Step 2 – ERO Enterprise Review

The CEA will acknowledge receipt of the submission in writing (either through Align or email) within 15 calendar days and verify that all information detailed in EOP-012-3 Part 6.4 or Part 7.2 is provided in the submittal. The CEA will work with the submitting entity to provide any missing information. The CEA will notify NERC of the extension request submittal and provide all associated information when acknowledging receipt of the submission.

The CEA will then perform a review[3] of (1) the circumstances beyond the control of the entity preventing implementation of the CAP within the identified timetable; (2) the revisions to the selected actions in the CAP; and (3) the updated timetable for implementing the selected actions~~3~~. Any additional information requested to support the extension request review will be coordinated with the submitting entity by the CEA. The CEA will complete the review within 45 calendar days of acknowledgement or provide notification to the submitting entity that they are extending the time needed for review.

[2] As a single Corrective Action Plan may be developed for multiple sites and multiple entities, a Corrective Action Plan extension request may be done in a similar manner.

[3] NERC may choose to participate in any review at its own discretion or at the request of the CEA.

~~3 NERC may choose to participate in any review at its own discretion or at the request of the CEA.~~

Examples of circumstances beyond the control of the responsible entity include, but are not limited to[4]:

- Delays resulting from regulatory/legal processes, such as permitting.
- Delays resulting from stakeholder processes required by tariff.
- Delays resulting from equipment lead times; or
- Delays resulting from unit outages being denied.

Due diligence (i.e., reasonable steps taken) in ordering equipment, obtaining permits, scheduling outages, etc., will be considered as part of the determination of whether a particular set of facts constitute circumstances beyond the control of the entity.

Step 3 – Registered Entity Notification

The CEA will communicate the approval or denial of the extension request or continuation of the time needed to review the extension request in writing to the submitting entity including the rationale for the determination. For any continuation of the review, the CEA will also provide the submitting entity with a revised timeline for when the determination will be provided. If an extension request is denied, the selected actions in the CAP need to be completed in accordance with the original timetables.

If a CAP extension request was denied, the submitting entity may request, within ~~five (5)~~15 calendar days of denial, a joint NERC and CEA review of the denial. The joint review should take no longer than 10 calendar days (subject to the information and resources available.) NERC and the CEA will evaluate the information provided and the submitting entity will be notified of the determination.

Step 4 – Reporting to NERC

Quarterly, the CEA will provide NERC with a report that, at a minimum, includes each extension request, whether the request was approved or denied, and the CEA's rationale for its decision. NERC will periodically provide trending and analysis of aggregated anonymized CAP extension requests for industry awareness and guidance.

Constraint Review Process

Process Overview

If a registered entity has determined that a Generator Cold Weather Constraint, developed in accordance with Reliability Standard EOP-012-3 Attachment 1, exists, the entity will work with the Regional Entity designated as its CEA to submit the Generator Cold Weather Constraint, with supporting documentation, to the CEA for review, evaluation, and validation or approval as outlined in this process.

The entity submitting the Generator Cold Weather Constraint(s) will be referred to as the 'submitting entity' and may represent itself or multiple registered entities under the same ownership with the same Generator Cold Weather Constraint. The submitting entity is responsible for ensuring all registered entities included

[4] The list provided is not exhaustive. Clear explanation of the facts and circumstances that demonstrate "beyond the control" is needed. The concept of "beyond the control" is also used in Reliability Standards FAC-003 Requirements R1 and R7, PRC-004 Requirement R5, TPL-001-5.1 Requirement R2, and TPL-007 Requirements R7 and R11.

are listed in the requested information and is for distributing any communications from its CEA to the other entities that are part of the Generator Cold Weather Constraint. If a Generator Cold Weather Constraint is submitted for multiple registered entities under the same ownership who have different Regional Entities designated as the CEA, the submitting entity's CEA will perform the steps outlined in this process and will be responsible for coordinating with the Regional Entity(ies) that are the designated CEA for the additional entities party to the Generator Cold Weather Constraint.

For entities in Coordinated Oversight, the CEA for this process is the Lead Regional Entity (LRE). The LRE will coordinate with the Affected Regional Entity(ies) (ARE) and the AREs may participate in the joint review as well.

Step 1 – Registered Entity Submittal

If an entity determines that it meets the required Generator Cold Weather Constraint language within Attachment 1, the submitting entity will submit the requisite data to their CEA through Align and the Secure Evidence Locker or other process tools as directed by the CEA. It is expected that data will be marked in accordance with Section 1500 of the Rules of Procedure in a similar manner to the evidence provided during a Compliance Audit.

Entities are encouraged to submit the Generator Cold Weather Constraint as soon as they are aware they will meet the Generator Cold Weather Constraint language within Attachment 1 but are required to meet EOP-012-3 Requirement R8[45]. Early submittal is requested to allow the CEA time to review, evaluate, and validate or approve the Generator Cold Weather Constraint.

If an entity determines a Generator Cold Weather Constraint is required for a unit, then subsequently has another unit that requires declaration of the same Generator Cold Weather Constraint (e.g., the same issue occurred at another location with implementing a freeze protection measure) an update to the original Generator Cold Weather Constraint is allowed. Note that supporting information for the other site is needed and the submittal/review timelines (per Requirement R8 and this process) will remain the same for the "new" addition. This will allow a ~~Generator Owner~~GO to perform the 36-calendar month review of the Generator Cold Weather Constraint for both instances at the same time.

It is the submitting entity's responsibility to ensure that all information detailed in EOP-012-3 R8 and Attachment 1 is provided in the entity's submittal to facilitate the CEA review. The submitting entity should review language within Attachment 1 and identify, in the submittal, if the Generator Cold Weather Constraint is a known Generator Cold Weather Constraint or a Generator Cold Weather Constraint requiring further review for approval.

Step 2 – ERO Enterprise Review

The CEA will acknowledge receipt of the submission in writing (either through Align or email) within 15 calendar days and verify that all information detailed in EOP-012-3 R8 and Attachment 1 is provided in the submitting entity's submittal. The CEA will work with the submitting entity to provide any missing information. The CEA will notify NERC of the Generator Cold Weather Constraint submittal (either through Align or via email) when acknowledging receipt of the submission. Indication of the Generator Cold Weather Constraint type (e.g., "Known" or "Case-by-Case") will be included in the notification to ensure NERC has sufficient visibility and oversight in the process.

The CEA will review the Generator Cold Weather Constraint submittal and supporting information[~~5~~6]. Any additional information requested to support the Generator Cold Weather Constraint review, evaluation, and validation or approval will be coordinated with the submitting entity by the CEA. The CEA will complete

[4~~5~~] Per EOP-012-3 R8.1, the Generator Owner must submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 calendar days of determining that the Generator Cold Weather Constraint is applicable for in-service units. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, the Generator Owner must submit the Generator Cold Weather Constraint declaration(s) no later than 15 calendar days after commercial operation.

[~~5~~6] NERC may choose to participate in any review at its own discretion or at the request of the CEA.

the review within 10 calendar days of submittal receipt confirmation for known Generator Cold Weather Constraint and 45 calendar days of submittal receipt confirmation for those Generator Cold Weather Constraint requiring further review for approval or provide notification to the submitting entity that they are extending the time needed to review[~~6~~7].

The determination whether to approve the case-by-case Generator Cold Weather Constraint will be based on the specific facts and circumstances provided by the submitting entity that defends and supports the declared constraint under the identified situations in EOP-012-3 Attachment 1.

Step 3 – Registered Entity Notification

The CEA will communicate the validation, approval, or denial of the Generator Cold Weather Constraint or continuation of the time needed to review the Generator Cold Weather Constraint in writing (via Align or email) to the submitting entity including the rationale for the determination. For any continuation of the review, the CEA will also provide the submitting entity with a revised timeline for when the determination will be provided. Denial of a Generator Cold Weather Constraint requires the entity to update its CAPs with corrective actions that will be completed within the timetables in Requirement R6 Part 6.3 or Requirement R7 Part 7.1 to begin from the date the ~~Generator Owner~~GO is notified that the Generator Cold Weather Constraint is invalid. Communication efforts between the submitting entity and the CEA related to updates of the CAP and timetables resulting from a denial of a Generator Cold Weather Constraint are strongly encouraged.

If a Generator Cold Weather Constraint was denied, the submitting entity may request, within ~~five (5)~~15 calendar days of denial, a joint NERC and CEA review of the denial. The joint review should take no longer than 10 calendar days (subject to the information and resources available.) NERC and the CEA will evaluate the information provided and the submitting entity will be notified of the determination.

Step 4 – Reporting to NERC

Quarterly, the CEA will provide NERC with a report that, at a minimum, includes each Generator Cold Weather Constraint request received, whether the request was validated, approved, or denied, and the CEA's rationale for its decision. NERC will periodically provide trending and analysis of aggregated anonymized Generator Cold Weather Constraint declarations for industry awareness and guidance.

[~~6~~7] If a large number of entities submit Generator Cold Weather Constraints at the same time (especially those tied to initial performance expectations as set in the EOP-012-3 Implementation Plan), the ERO Enterprise anticipates additional time will be needed to accommodate these initial reviews.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Calculating Extreme Cold Weather Temperature

RELIABILITY | RESILIENCE | SECURITY




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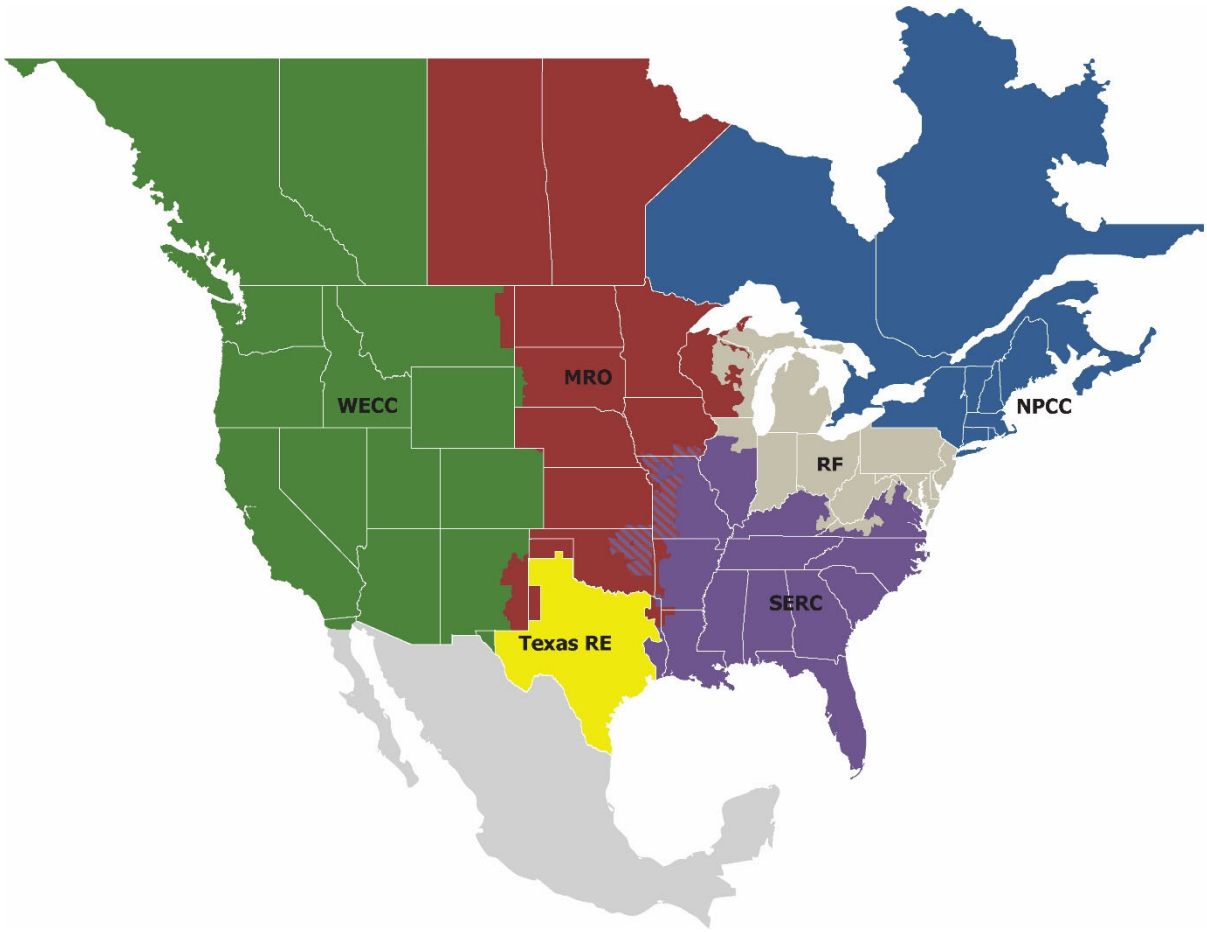
Preface

Electricity is a key component of the fabric of modern society and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of NERC and the six Regional Entities, is a highly reliable, resilient, and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

Reliability | Resilience | Security
Because nearly 400 million citizens in North America are counting on us

The North American BPS is made up of six Regional Entity boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one Regional Entity while associated Transmission Owners/Operators participate in another.



MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	WECC

Introduction

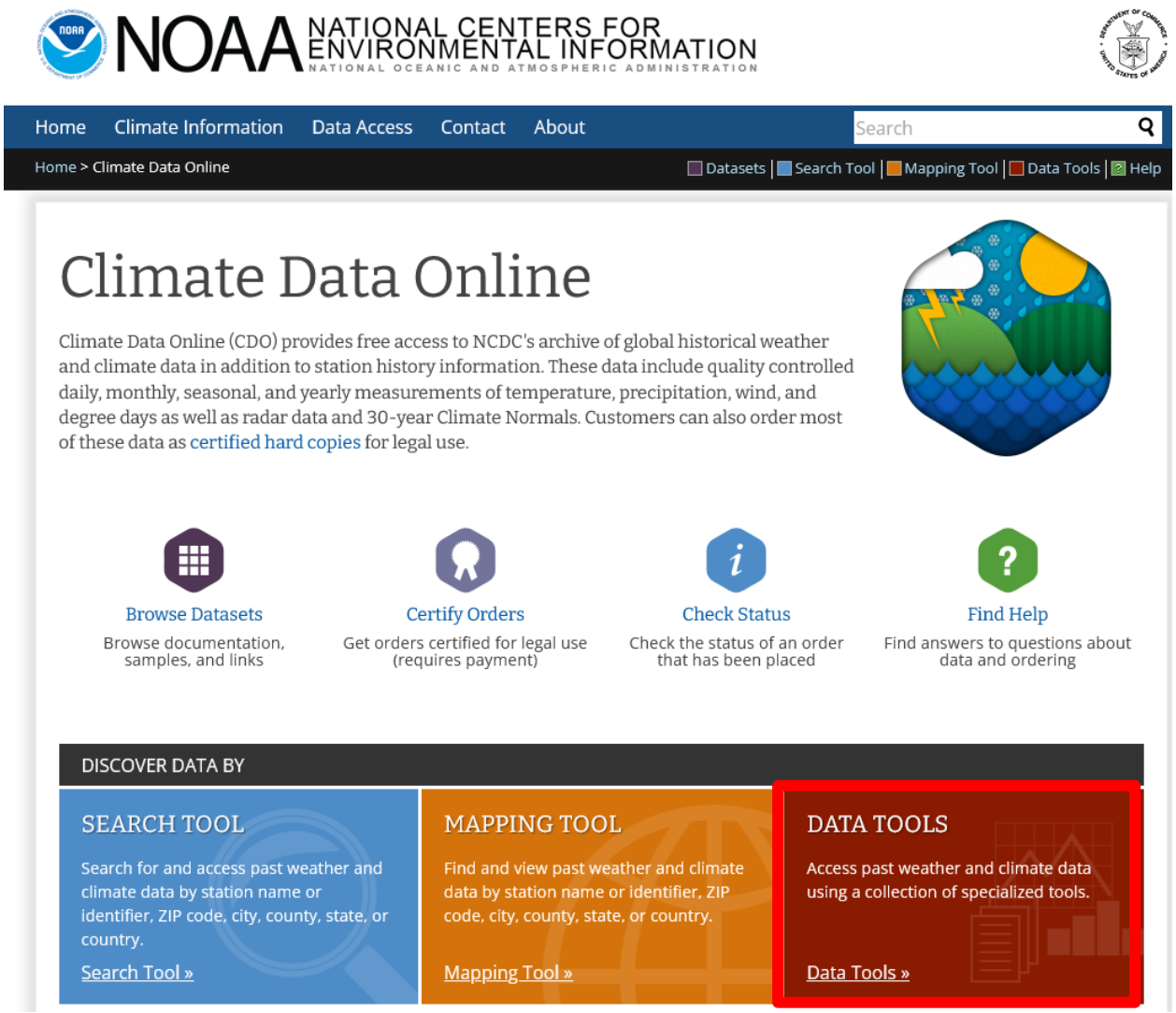
This document demonstrates two methods for acquiring data for a given location and a method of performing the statistical analysis of the data to determine the Extreme Cold Weather Temperature for a given location. These examples are focused on United States and will use data obtained from NOAA's Climate Data Online database and Automated Surface Observing Systems (ASOS). Performance of the statistical analysis with Microsoft Excel is demonstrated as well. The method shown in this document only shows the collection of data and two methods of analyzing this data, both using Microsoft Excel. Note that other data sources may be available for use. Although not addressed here, offshore installations may be able to use National Data Buoy Center (noaa.gov) but data is limited. It is understood that a complete single source data set may not always be available due to a variety of reasons. There may be ways to gather a more complete data set than described below. Document your approach when identifying and addressing suspect data.

Determination of Location's Extreme Cold Weather Temperature

Gathering the Data From NOAA

Navigate to https://www.ncdc.noaa.gov/cdo-web/

1. Select **Data Tools.**



2. Scroll down if necessary and select **Local Climatological Data (LCD).**

Find a Station

Locate weather observing stations using a variety of parameters such as address, ZIP code, date, and data type with filters by observation type

Select a Location

Order data by weather observing stations or by geographic locations using a simplified drill-down interface with data from U.S. and other countries

Search Within a Single Dataset

The following search tools access data from within a specific dataset. Use these tools to view or order data from within each respectiv dataset. Data will be in a more standard format across stations or locations.

Climate Normals

View temperature and precipitation Climate Normals for over 9,800 stations across the United States and a selection of other territories

Daily Weather Records

Access summaries of recent global and U.S. daily weather records with options to view monthly, annual, all-time or selected records

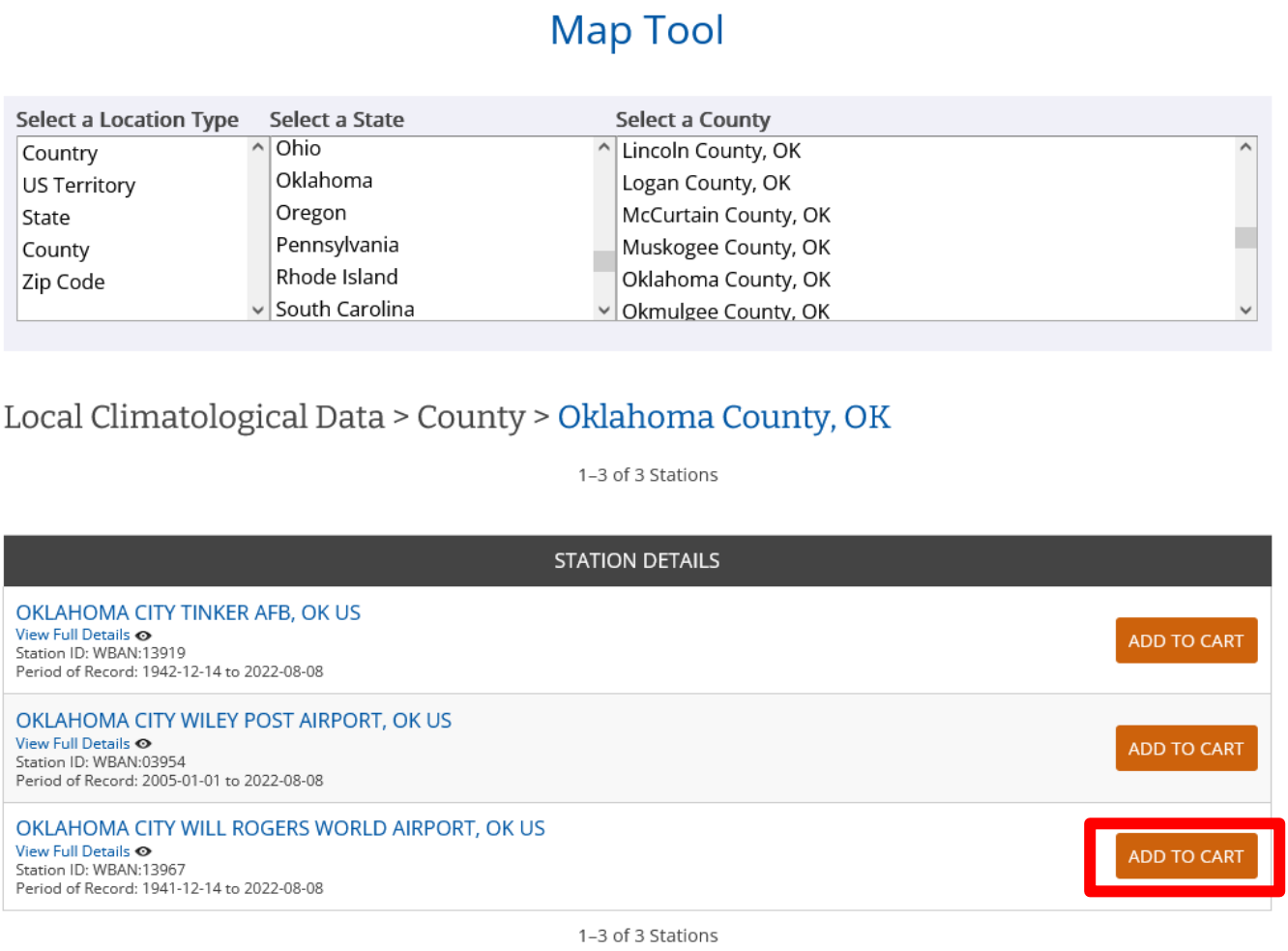
Local Climatological Data (LCD)

View and order hourly, daily, and monthly data from nearly 2400 locations within the U.S., surrounding territories, and other selected areas

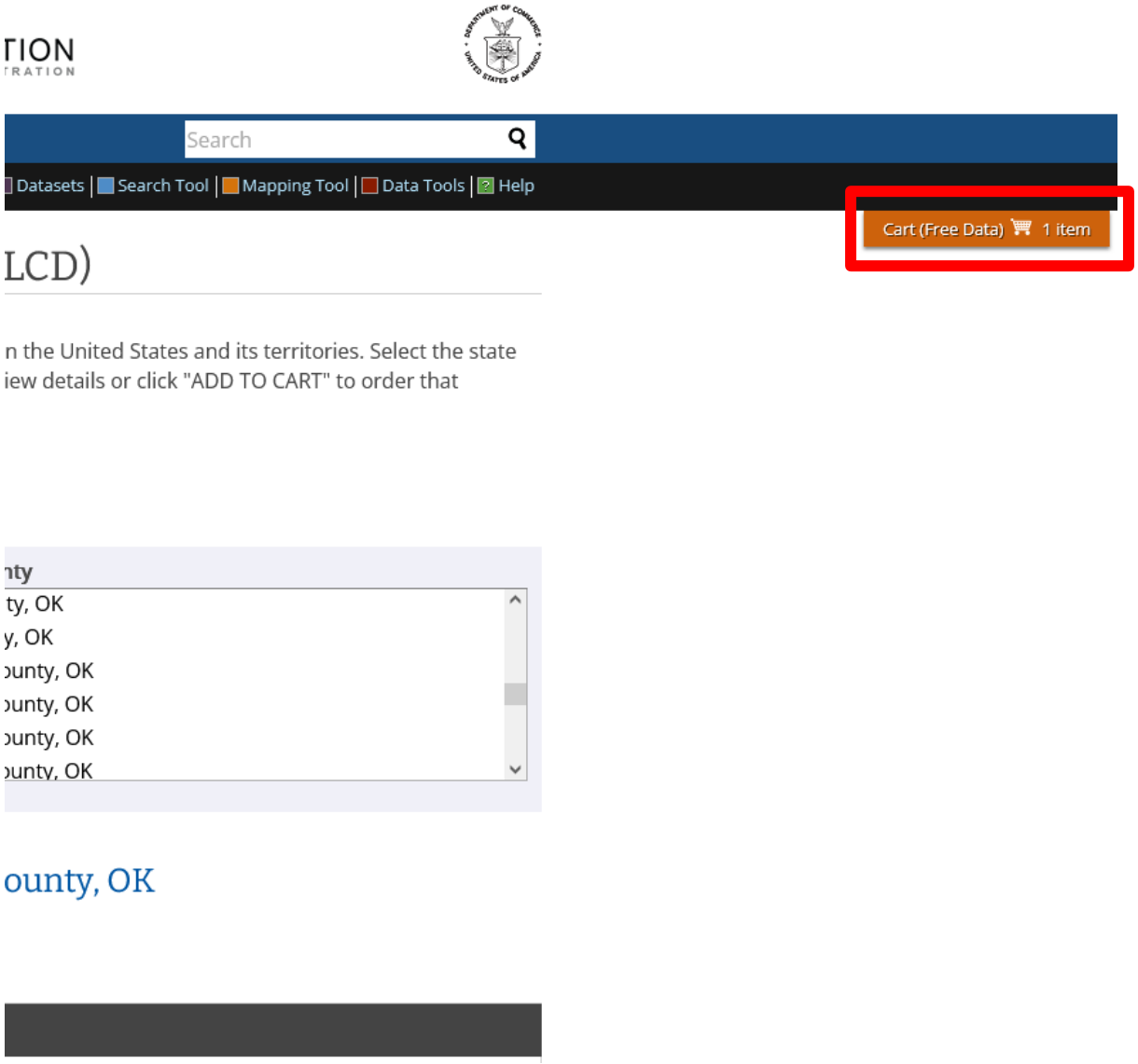
Marine Data

View and order historical marine data which is comprised of ship, buoy, and platform observations from 1662 to present.

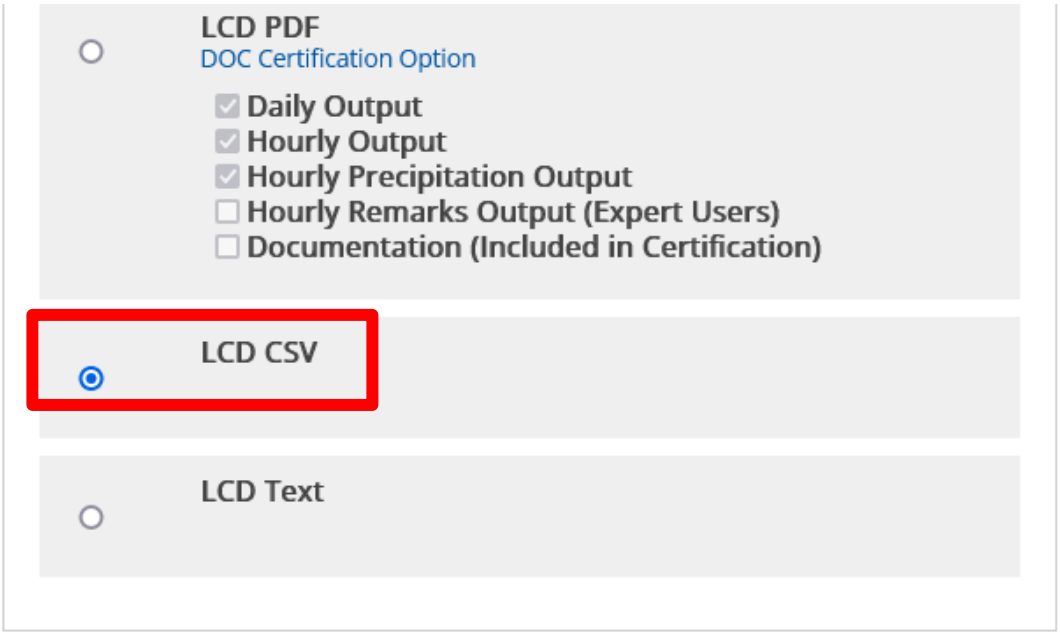
3. Use the selection tool to find a weather station appropriate for your location and click ADD TO CART.

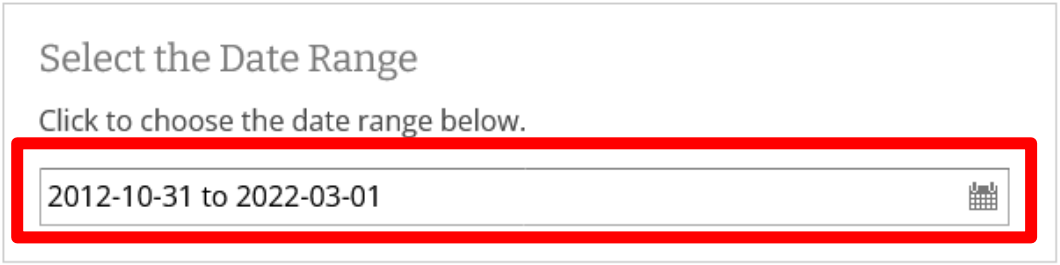


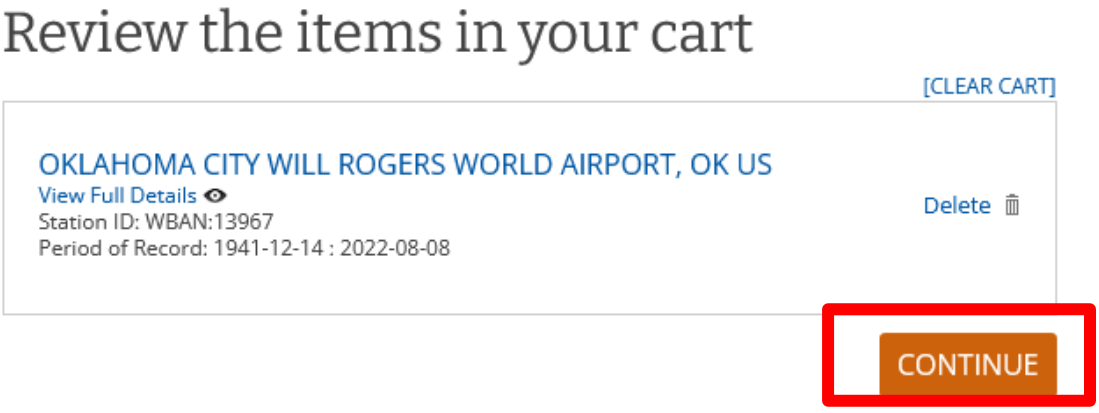
4. Click on the **cart icon** in the upper right-hand portion of the page.



5. Select LCD CSV, your desired date range, and then click continue. (Note: date ranges must be less than 10 years, so this process might have to be repeated several times and multiple files combined into one in order to get all data necessary to perform the analysis to determine the Extreme Cold Weather Temperature)







6. Enter and verify your email address and click **Submit Order.** You will receive an email when your request has been processed and is ready to download.

REQUESTED DATA REVIEW	
Dataset	Local Climatological Data
Order Start Date	2012-10-31 00:00
Order End Date	2022-03-01 23:59
Output Format	LCD CSV
Stations/Locations	OKLAHOMA CITY WILL ROGERS WORLD AIRPORT, OK US (Station ID: WBAN:13967)

Enter email address

Please enter your email address. This is the address to which your data links and information regarding this order will be sent. Please read NOAA's Privacy Policy if you have any concerns.

Email Address

email@address.com

Verify Email Address

email@address.com

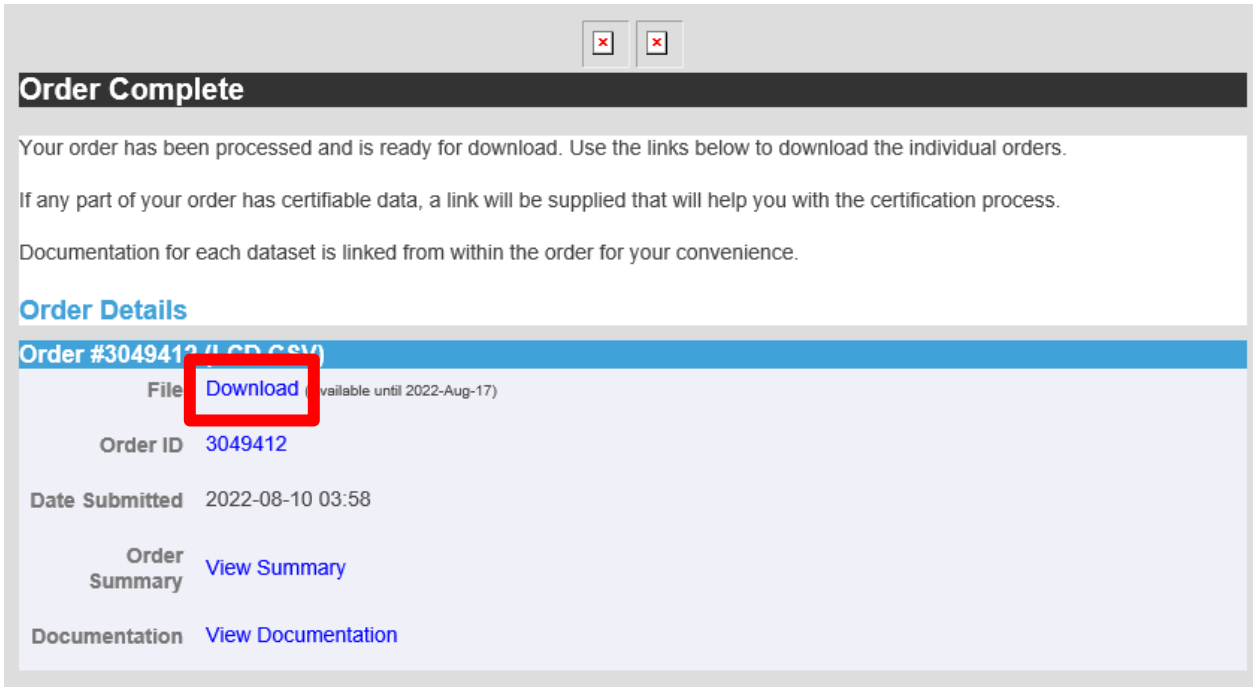
Remember my email address

[Uncheck to forget]

NOAA will not share your email address with anyone. The email address will not be used for any purpose other than communicating the order status.

EDIT ORDER SUBMIT ORDER

7. Click **Download** in the email that you will receive from NOAA to download your dataset.



Analyzing the Data

Option 1

1. Open the .csv file that was downloaded using the previous steps (and combine with other .csv files as necessary to cover the required date range).

2. Add filters to the first row and filter on "Report Type", column C, to only show report type FM-15, this is the standard METAR data.

STATION	DATE	REPORT	SOURCE	AWND	Backup	Backup	Backup	Backup	Backup	Backup	Backup	Backup
72353013967	2012-10-31T00:52:00	FM-15	7									
72353013967	2012-10-31T01:52:00	FM-15	7									
72353013967	2012-10-31T02:52:00	FM-15	7									
72353013967	2012-10-31T03:52:00	FM-15	7									
72353013967	2012-10-31T04:52:00	FM-15	7									
72353013967	2012-10-31T05:52:00	FM-15	7									
72353013967	2012-10-31T06:52:00	FM-15	7									
72353013967	2012-10-31T07:52:00	FM-15	7									
72353013967	2012-10-31T08:52:00	FM-15	7									
72353013967	2012-10-31T09:52:00	FM-15	7									
72353013967	2012-10-31T10:52:00	FM-15	7									
72353013967	2012-10-31T11:52:00	FM-15	7									
72353013967	2012-10-31T12:52:00	FM-15	7									
72353013967	2012-10-31T13:52:00	FM-15	7									
72353013967	2012-10-31T14:52:00	FM-15	7									
72353013967	2012-10-31T15:52:00	FM-15	7									
72353013967	2012-10-31T16:52:00	FM-15	7									
72353013967	2012-10-31T17:52:00	FM-15	7									
72353013967	2012-10-31T18:52:00	FM-15	7									
72353013967	2012-10-31T19:52:00	FM-15	7									
72353013967	2012-10-31T20:52:00	FM-15	7									
72353013967	2012-10-31T21:52:00	FM-15	7									
72353013967	2012-10-31T22:52:00	FM-15	7									
72353013967	2012-10-31T23:52:00	FM-15	7									
72353013967	2012-11-01T00:52:00	FM-15	7									
72353013967	2012-11-01T01:52:00	FM-15	7									
72353013967	2012-11-01T02:52:00	FM-15	7									
72353013967	2012-11-01T03:52:00	FM-15	7									
72353013967	2012-11-01T04:52:00	FM-15	7									
72353013967	2012-11-01T05:52:00	FM-15	7									

3. Select the Date column, column B, by clicking on the column, scroll over to the Hourly Dry Bulb Temperature column, column AS, and holding down the CTRL key, select that column. Copy and paste both columns into a new sheet named "Clean and Filter".

DATE	HourlyDryBulbTemperature		
2012-10-31T00:52:00	52		
2012-10-31T01:52:00	51		
2012-10-31T02:52:00	50		
2012-10-31T03:52:00	47		
2012-10-31T04:52:00	46		
2012-10-31T05:52:00	46		
2012-10-31T06:52:00	44		
2012-10-31T07:52:00	48		
2012-10-31T08:52:00	52		
2012-10-31T09:52:00	57		
2012-10-31T10:52:00	61		
2012-10-31T11:52:00	65		
2012-10-31T12:52:00	67		
2012-10-31T13:52:00	68		
2012-10-31T14:52:00	71		
2012-10-31T15:52:00	71		
2012-10-31T16:52:00	70		
2012-10-31T17:52:00	66		
2012-10-31T18:52:00	62		
2012-10-31T19:52:00	59		
2012-10-31T20:52:00	54		
2012-10-31T21:52:00	51		
2012-10-31T22:52:00	52		
2012-10-31T23:52:00	52		
2012-11-01T00:52:00	53		

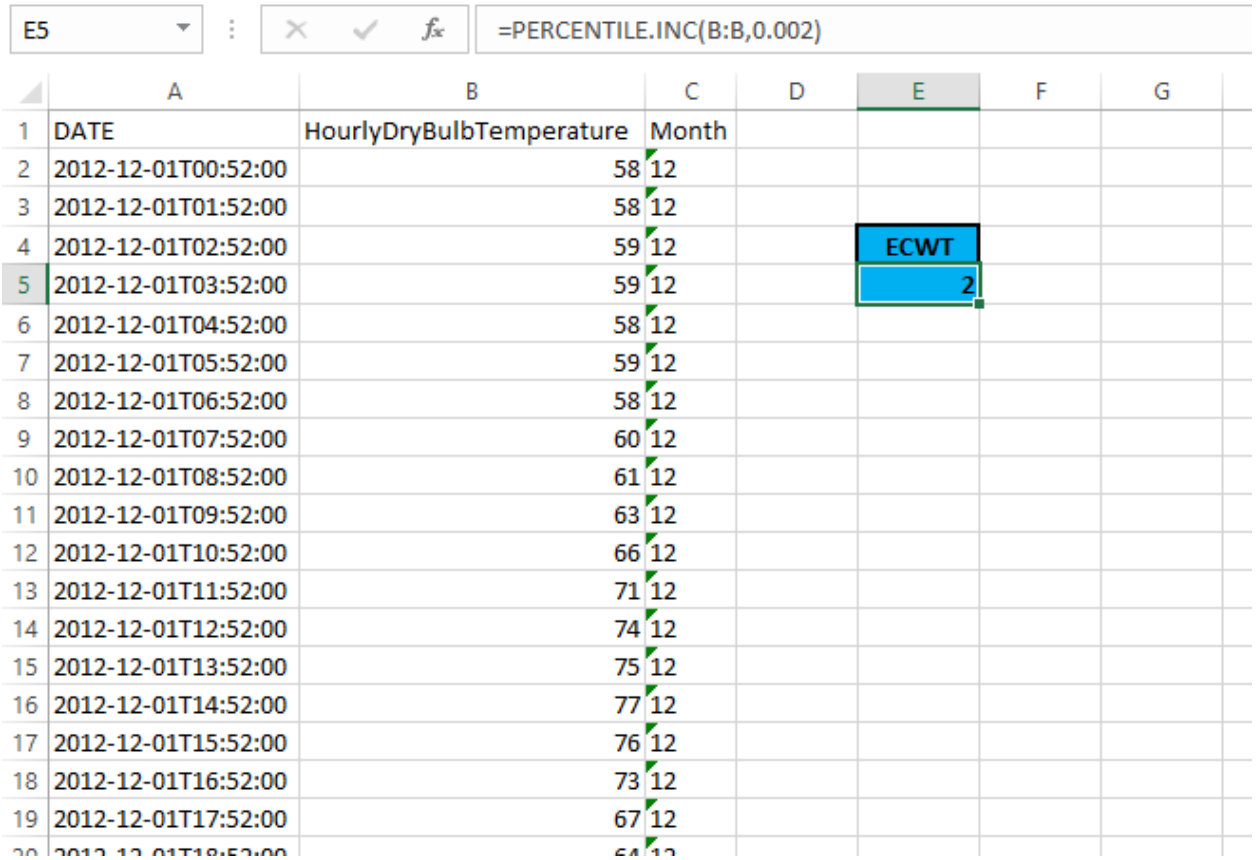
4. Using the data on the "Clean and Filter" sheet, type **Month** in column C1, type the formula "=mid(A2,6,2)" in cell C2, and copy that formula in column C to the last row of the data set. Then Filter month to only show months 1, 2, 12 (January, February, and December).

5. You can then filter by Hourly Dry Bulb Temperature (Column B) to find and address bad data as appropriate. Bad data may consist of corrupt or missing values. It is beneficial to document information about the bad data to support the calculation of ECWT. If there are other sources that are similar to the source selected that has more complete data or the data can be used, consider that option and document accordingly. It is understood that complete single source data sets may not be the norm due to a variety of reasons- technology, maintenance on monitoring devices, failure to record, instrument failure, instrument testing, etc. You may not have the reason for the corrupt or missing data and documenting the raw data and its source is recommended. Now Select, Copy, and Paste the remaining data to a new sheet named ECWT

	A	B	C	D
1	DATE	HourlyDryBulbTemperatur	Month	
747	2012-12-01T00:52:00	58	12	
748	2012-12-01T01:52:00	58	12	
749	2012-12-01T02:52:00	59	12	
750	2012-12-01T03:52:00	59	12	
751	2012-12-01T04:52:00	58	12	
752	2012-12-01T05:52:00	59	12	
753	2012-12-01T06:52:00	58	12	
754	2012-12-01T07:52:00	60	12	
755	2012-12-01T08:52:00	61	12	
756	2012-12-01T09:52:00	63	12	
757	2012-12-01T10:52:00	66	12	
758	2012-12-01T11:52:00	71	12	
759	2012-12-01T12:52:00	74	12	
760	2012-12-01T13:52:00	75	12	
761	2012-12-01T14:52:00	77	12	
762	2012-12-01T15:52:00	76	12	
763	2012-12-01T16:52:00	73	12	
764	2012-12-01T17:52:00	67	12	
765	2012-12-01T18:52:00	64	12	
766	2012-12-01T19:52:00	63	12	
767	2012-12-01T20:52:00	58	12	
768	2012-12-01T21:52:00	61	12	
769	2012-12-01T22:52:00	52	12	
770	2012-12-01T23:52:00	50	12	
771	2012-12-02T00:52:00	48	12	
772	2012-12-02T01:52:00	46	12	
773	2012-12-02T02:52:00	45	12	
774	2012-12-02T03:52:00	43	12	
775	2012-12-02T04:52:00	44	12	
776	2012-12-02T05:52:00	43	12	

6. Using Excel's built in Percentile function, the Extreme Cold Weather Temperature (ECWT) can now be determined. While on the ECWT sheet, in a blank cell use the function "=PERCENTILE.INC()" and select all temperature data in Column B (Hourly Dry Bulb Temperature) on the "ECWT" sheet and use 0.002 for the percentile value. The formula will look similar to this, "=PERCENTILE.INC(B:B,0.002)" (using 0.002 for the second argument in this function returns the two-tenths percentile temperature of the hourly temperatures measured in the dataset used).

   <u>This value should be representative of the Extreme Cold Weather Temperature based on the given dataset.</u>



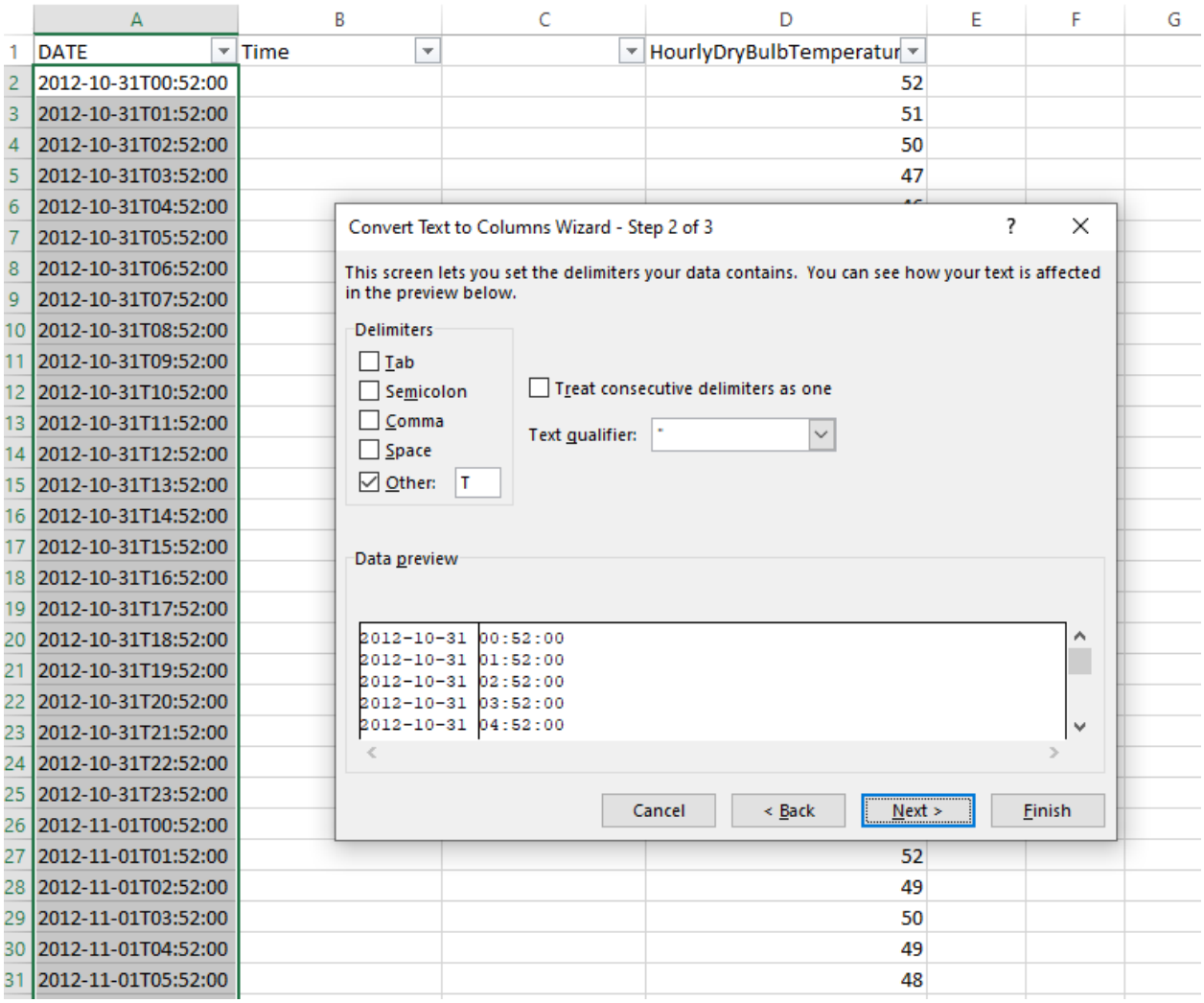
E5 | =PERCENTILE.INC(B:B,0.002)

	A	B	C	D	E	F	G
1	DATE	HourlyDryBulbTemperature	Month				
2	2012-12-01T00:52:00	58	12				
3	2012-12-01T01:52:00	58	12				
4	2012-12-01T02:52:00	59	12		ECWT		
5	2012-12-01T03:52:00	59	12		2		
6	2012-12-01T04:52:00	58	12				
7	2012-12-01T05:52:00	59	12				
8	2012-12-01T06:52:00	58	12				
9	2012-12-01T07:52:00	60	12				
10	2012-12-01T08:52:00	61	12				
11	2012-12-01T09:52:00	63	12				
12	2012-12-01T10:52:00	66	12				
13	2012-12-01T11:52:00	71	12				
14	2012-12-01T12:52:00	74	12				
15	2012-12-01T13:52:00	75	12				
16	2012-12-01T14:52:00	77	12				
17	2012-12-01T15:52:00	76	12				
18	2012-12-01T16:52:00	73	12				
19	2012-12-01T17:52:00	67	12				

Option 2

These next few steps demonstrate how to view the distribution of temperatures from the data set and obtain the Extreme Cold Weather Temperature by a slightly different method.

1. On the "Clean and Filter" sheet, insert two new columns between column A and column B. Select column A and use Excel's *Text to Columns* feature and selected the delimited option and use the letter "T" to split the date data into a date component and a time component by hitting "Next" and "Finish". (Note: You can also do a "Find and Replace, finding the letter T and replacing it with a space to change the information in the Date column to a numerical value that can then be used for calculations.)

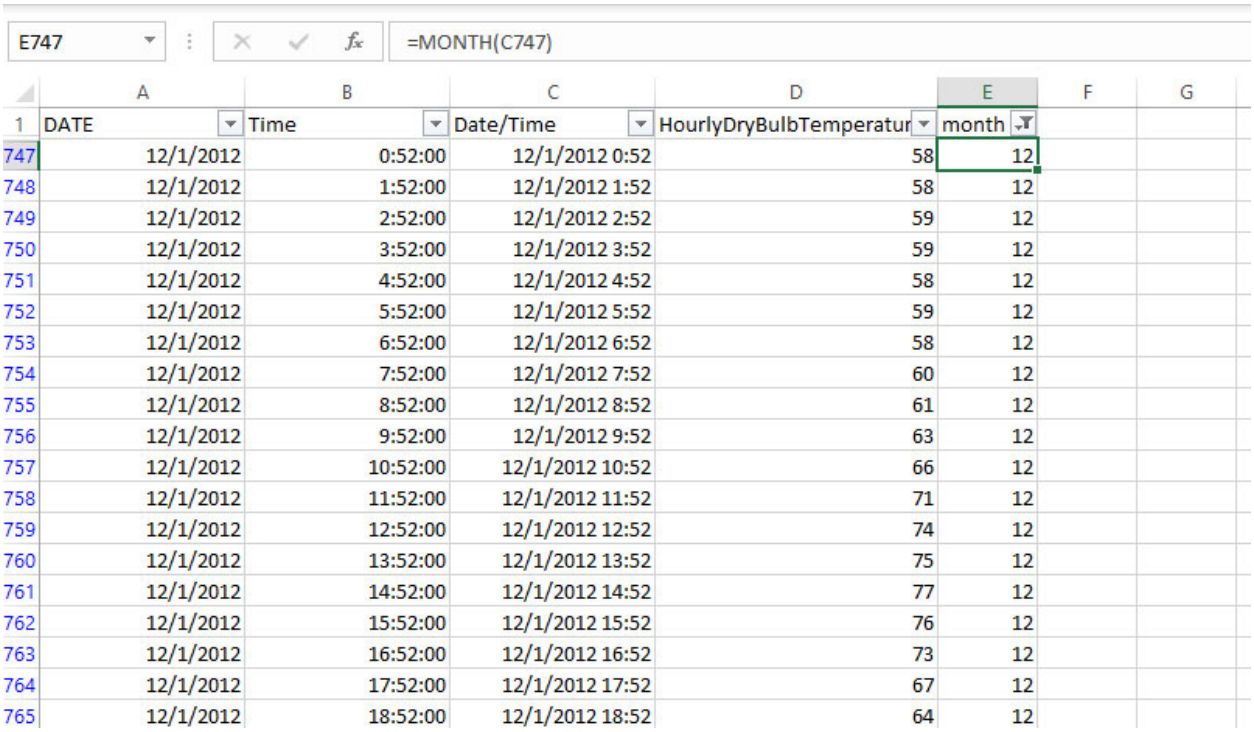


2. Add in column C, add the date in column A to time in column B, and copy this formula for all rows of the data set.

C2 =A2+B2

	A	B	C	D
1	DATE	Time	Date/Time	HourlyDryBulbTemperatur
2	10/31/2012	0:52:00	10/31/2012 0:52	52
3	10/31/2012	1:52:00	10/31/2012 1:52	51
4	10/31/2012	2:52:00	10/31/2012 2:52	50
5	10/31/2012	3:52:00	10/31/2012 3:52	47
6	10/31/2012	4:52:00	10/31/2012 4:52	46
7	10/31/2012	5:52:00	10/31/2012 5:52	46
8	10/31/2012	6:52:00	10/31/2012 6:52	44
9	10/31/2012	7:52:00	10/31/2012 7:52	48
10	10/31/2012	8:52:00	10/31/2012 8:52	52
11	10/31/2012	9:52:00	10/31/2012 9:52	57
12	10/31/2012	10:52:00	10/31/2012 10:52	61
13	10/31/2012	11:52:00	10/31/2012 11:52	65
14	10/31/2012	12:52:00	10/31/2012 12:52	67
15	10/31/2012	13:52:00	10/31/2012 13:52	68
16	10/31/2012	14:52:00	10/31/2012 14:52	71
17	10/31/2012	15:52:00	10/31/2012 15:52	71
18	10/31/2012	16:52:00	10/31/2012 16:52	70
19	10/31/2012	17:52:00	10/31/2012 17:52	66
20	10/31/2012	18:52:00	10/31/2012 18:52	62
21	10/31/2012	19:52:00	10/31/2012 19:52	59
22	10/31/2012	20:52:00	10/31/2012 20:52	54
23	10/31/2012	21:52:00	10/31/2012 21:52	51

3. Type Month in cell E1, and in cell E2 use the formula "=month(C2)". Copy the formula for all rows of the data set, then filter based on month, only selecting 1,2,12 for the desired months. Then copy remaining data from column C and column D to a sheet named Histogram.



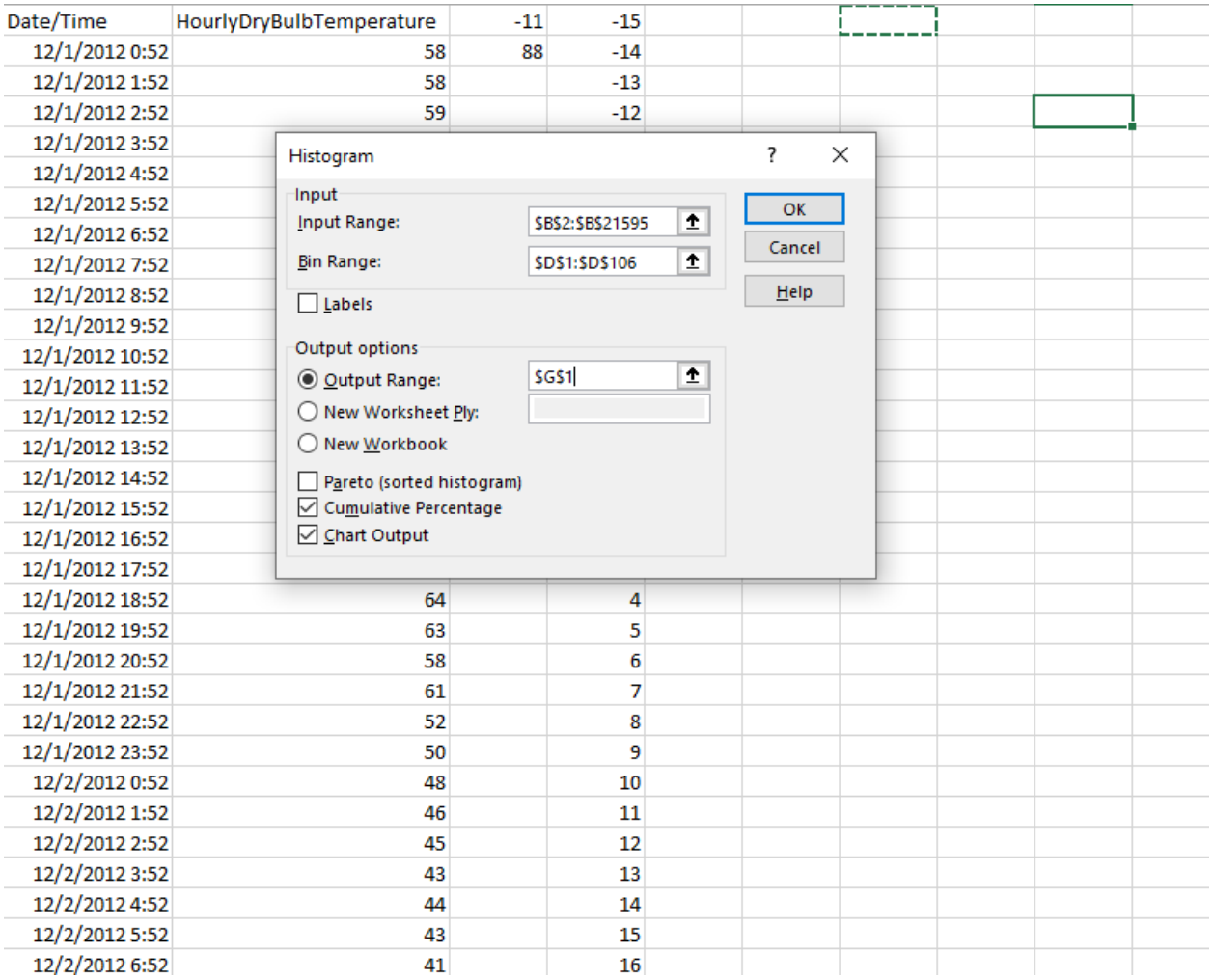
E747 =MONTH(C747)

	A	B	C	D	E	F	G
1	DATE	Time	Date/Time	HourlyDryBulbTemperatur	month		
747	12/1/2012	0:52:00	12/1/2012 0:52	58	12		
748	12/1/2012	1:52:00	12/1/2012 1:52	58	12		
749	12/1/2012	2:52:00	12/1/2012 2:52	59	12		
750	12/1/2012	3:52:00	12/1/2012 3:52	59	12		
751	12/1/2012	4:52:00	12/1/2012 4:52	58	12		
752	12/1/2012	5:52:00	12/1/2012 5:52	59	12		
753	12/1/2012	6:52:00	12/1/2012 6:52	58	12		
754	12/1/2012	7:52:00	12/1/2012 7:52	60	12		
755	12/1/2012	8:52:00	12/1/2012 8:52	61	12		
756	12/1/2012	9:52:00	12/1/2012 9:52	63	12		
757	12/1/2012	10:52:00	12/1/2012 10:52	66	12		
758	12/1/2012	11:52:00	12/1/2012 11:52	71	12		
759	12/1/2012	12:52:00	12/1/2012 12:52	74	12		
760	12/1/2012	13:52:00	12/1/2012 13:52	75	12		
761	12/1/2012	14:52:00	12/1/2012 14:52	77	12		
762	12/1/2012	15:52:00	12/1/2012 15:52	76	12		
763	12/1/2012	16:52:00	12/1/2012 16:52	73	12		
764	12/1/2012	17:52:00	12/1/2012 17:52	67	12		
765	12/1/2012	18:52:00	12/1/2012 18:52	64	12		

4. On the Histogram sheet, enter "=min(B:B)" in cell C1, and "=max(B:B)" in cell C2. This will give you the minimum and maximum temperatures in the dataset. We will use the temperatures to set range for this histogram. In Column D start with a value, a few degrees below the min, then list every degree to a few degrees above the max.

Date/Time	HourlyDryBulbTemperature	-11	-15	
12/1/2012 0:52	58	88	-14	
12/1/2012 1:52	58		-13	
12/1/2012 2:52	59		-12	
12/1/2012 3:52	59		-11	
12/1/2012 4:52	58		-10	
12/1/2012 5:52	59		-9	
12/1/2012 6:52	58		-8	
12/1/2012 7:52	60		-7	
12/1/2012 8:52	61		-6	
12/1/2012 9:52	63		-5	
12/1/2012 10:52	66		-4	
12/1/2012 11:52	71		-3	
12/1/2012 12:52	74		-2	
12/1/2012 13:52	75		-1	
12/1/2012 14:52	77		0	
12/1/2012 15:52	76		1	
12/1/2012 16:52	73		2	
12/1/2012 17:52	67		3	
12/1/2012 18:52	64		4	
12/1/2012 19:52	63		5	
12/1/2012 20:52	58		6	
12/1/2012 21:52	61		7	
12/1/2012 22:52	52		8	
12/1/2012 23:52	50		9	
12/2/2012 0:52	48		10	
12/2/2012 1:52	46		11	
12/2/2012 2:52	45		12	
12/2/2012 3:52	43		13	
12/2/2012 4:52	44		14	
12/2/2012 5:52	43		15	
12/2/2012 6:52	41		16	
12/2/2012 7:52	38		17	
12/2/2012 8:52	44		18	

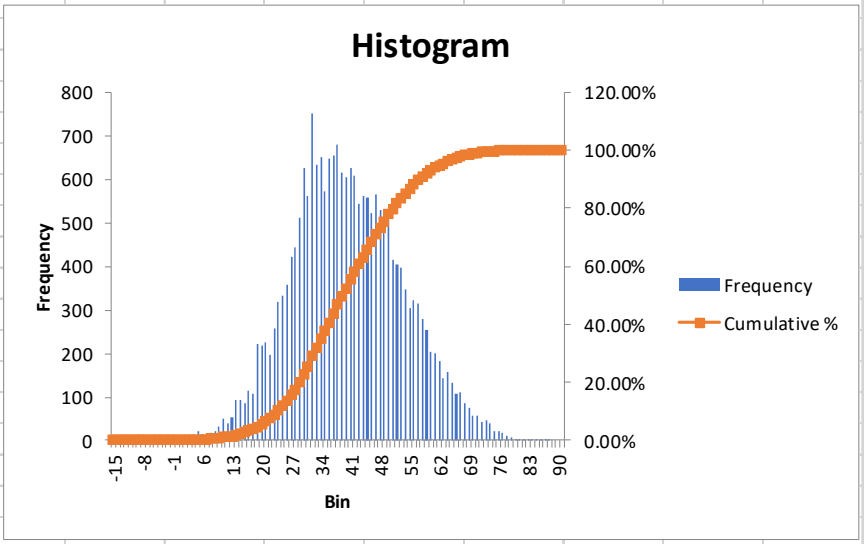
5. In the Data Analysis ToolPak in excel, select histogram. Select all dry bulb temperatures for your Input Range. Select all the Temperatures in column D for our Bin Range. Select an empty cell for your Output Range. Check the Cumulative Percentage and Chart Output boxes.



Date/Time	HourlyDryBulbTemperature	-11	-15
12/1/2012 0:52	58	88	-14
12/1/2012 1:52	58		-13
12/1/2012 2:52	59		-12
12/1/2012 3:52			
12/1/2012 4:52			
12/1/2012 5:52			
12/1/2012 6:52			
12/1/2012 7:52			
12/1/2012 8:52			
12/1/2012 9:52			
12/1/2012 10:52			
12/1/2012 11:52			
12/1/2012 12:52			
12/1/2012 13:52			
12/1/2012 14:52			
12/1/2012 15:52			
12/1/2012 16:52			
12/1/2012 17:52			
12/1/2012 18:52	64		4
12/1/2012 19:52	63		5
12/1/2012 20:52	58		6
12/1/2012 21:52	61		7
12/1/2012 22:52	52		8
12/1/2012 23:52	50		9
12/2/2012 0:52	48		10
12/2/2012 1:52	46		11
12/2/2012 2:52	45		12
12/2/2012 3:52	43		13
12/2/2012 4:52	44		14
12/2/2012 5:52	43		15
12/2/2012 6:52	41		16

6. The output from this will provide a listing of percentile rankings for the listed temperatures, as well as a graph output of the distribution of temperatures contained in this dataset. The "Bin" column shows the temperature, "Frequency" shows how many times that temperature occurred within the dataset, and "Cumulative %" shows the percentile ranking for each temperature. Choose the temperature at or closest to the 0.2 percentile level.

Bin	*Frequency*	*umulative %*
-15	0	0.00%
-14	0	0.00%
-13	0	0.00%
-12	0	0.00%
-11	1	0.00%
-10	0	0.00%
-9	2	0.01%
-8	0	0.01%
-7	1	0.02%
-6	4	0.04%
-5	4	0.06%
-4	4	0.07%
-3	1	0.08%
-2	4	0.10%
-1	6	0.13%
0	5	0.15%
1	3	0.16%
2	11	**0.21%**
3	5	0.24%
4	13	0.30%
5	22	0.40%
6	14	0.46%
7	12	0.52%
8	17	0.60%
9	23	0.70%
10	32	0.85%
11	50	1.08%
12	39	1.26%
13	53	1.51%
14	93	1.94%
15	92	2.37%
16	86	2.76%

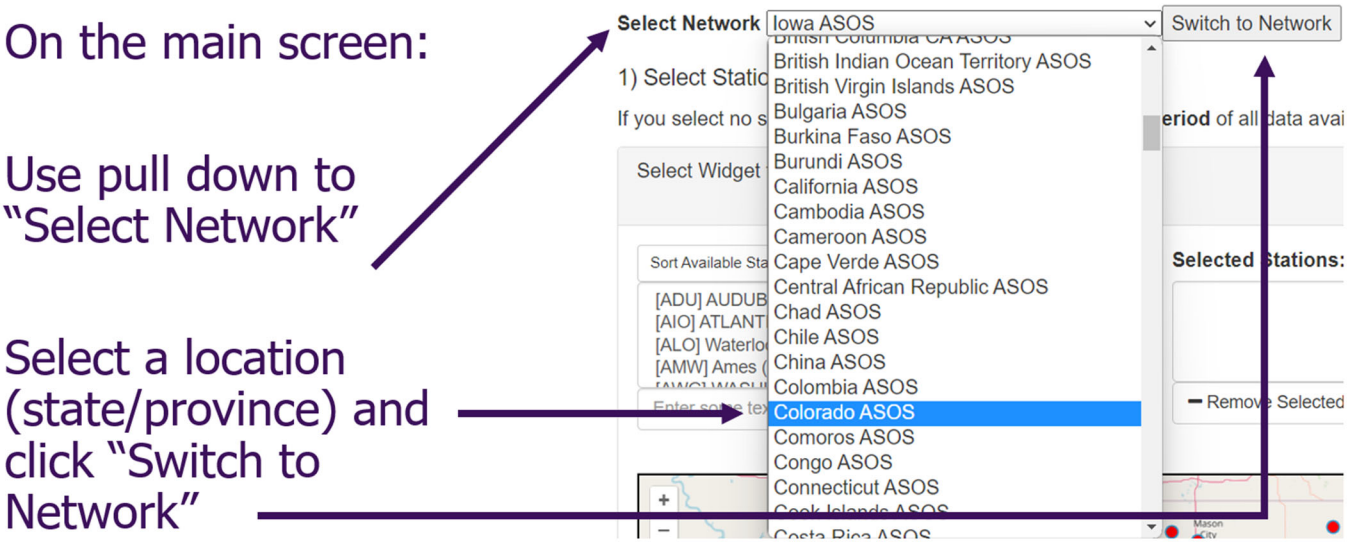


Gathering Data From ASOS

The Automated Surface Observing System (ASOS) program is a joint effort between the National Weather Service (NWS), the Federal Aviation Administration (FAA), and the Department of Defense (DOD). The primary function of ASOS stations is to take minute-by-minute observations and generate weather reports for use. The National Center for Environmental Information (NCEI) provides an archive of one-minute internal observations for many US ASOS sites back to the year 2000. Data is not available for all sites back to the year 2000.

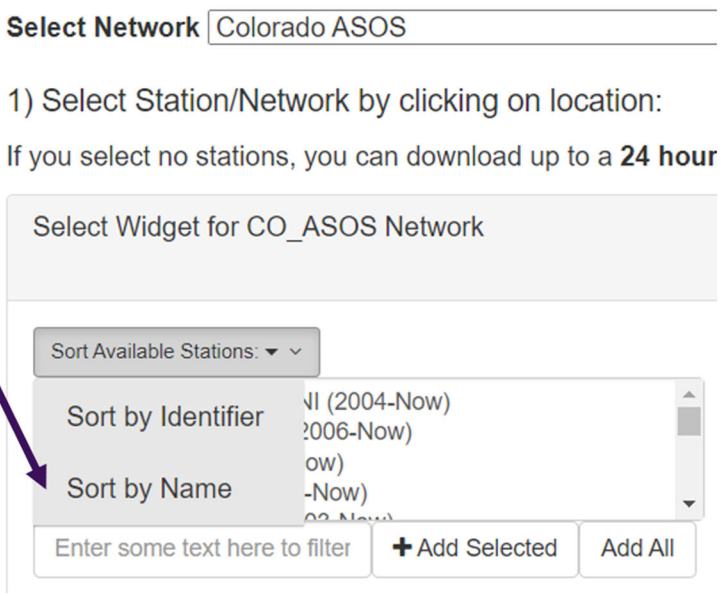
Each ASOS station is designed to provide observations every minute of every hour of every day. In general, ASOS stations are located at airports so may limit some use for ECWT calculations depending upon the Generator Owner selection process. Sensors measure wind speed and direction, dew point, air temperature, and station pressure. The vast majority also measure precipitation type and amount, visibility, and cloud height and thickness. Data is available for Canadian airports. More information is available at IEM :: ASOS/AWOS Network (iastate.edu) and https://mesonet.agron.iastate.edu/request/download.phtml where the example graphics were gathered. Additional information is available at ASOS (weather.gov).

1. Selecting Data
   ASOS uses "Network" to describe particular locations. From the main screen you would use the pulldown for "Select Network" and then select a particular location.



Sorting the data is available by an "identifier" (the airport code) or "name" (city or airport name normally) with "name" probably providing the easier way to identify the location needed to facilitate ECWT calculation efforts. This is needed to support the weather station selection. When downloading the information, the "identifier" will be included in the data set, so it is recommended that you ensure you are getting the correct location by both name and identifier.

Select "Sort by Identifier" or "Sort by Name" on the "Sort Available Stations" drop down.



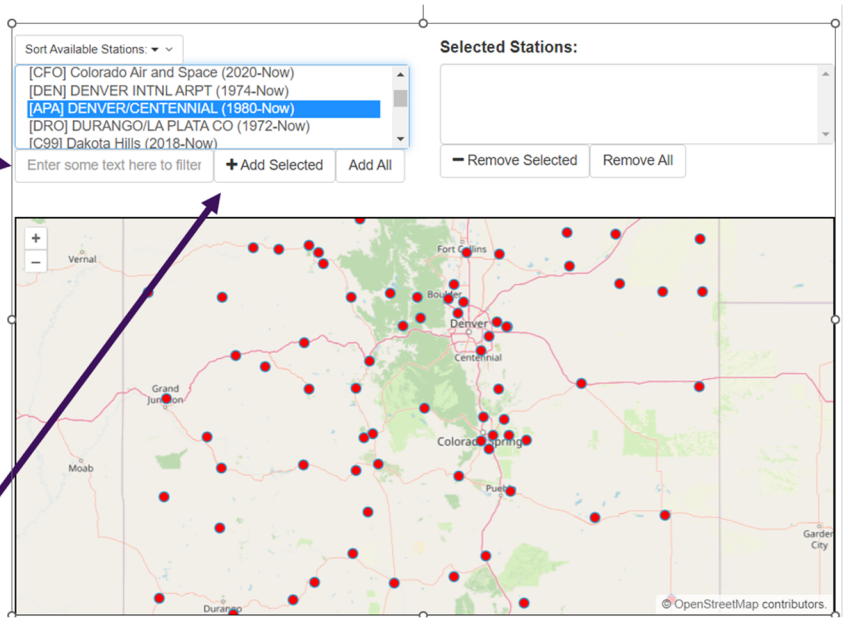
A map of available weather stations is provided along with options to select a particular weather station. Make sure you select "+ADD Selected" toggle button to capture the weather station.

Text search

Or can use the map to find a station name/ID

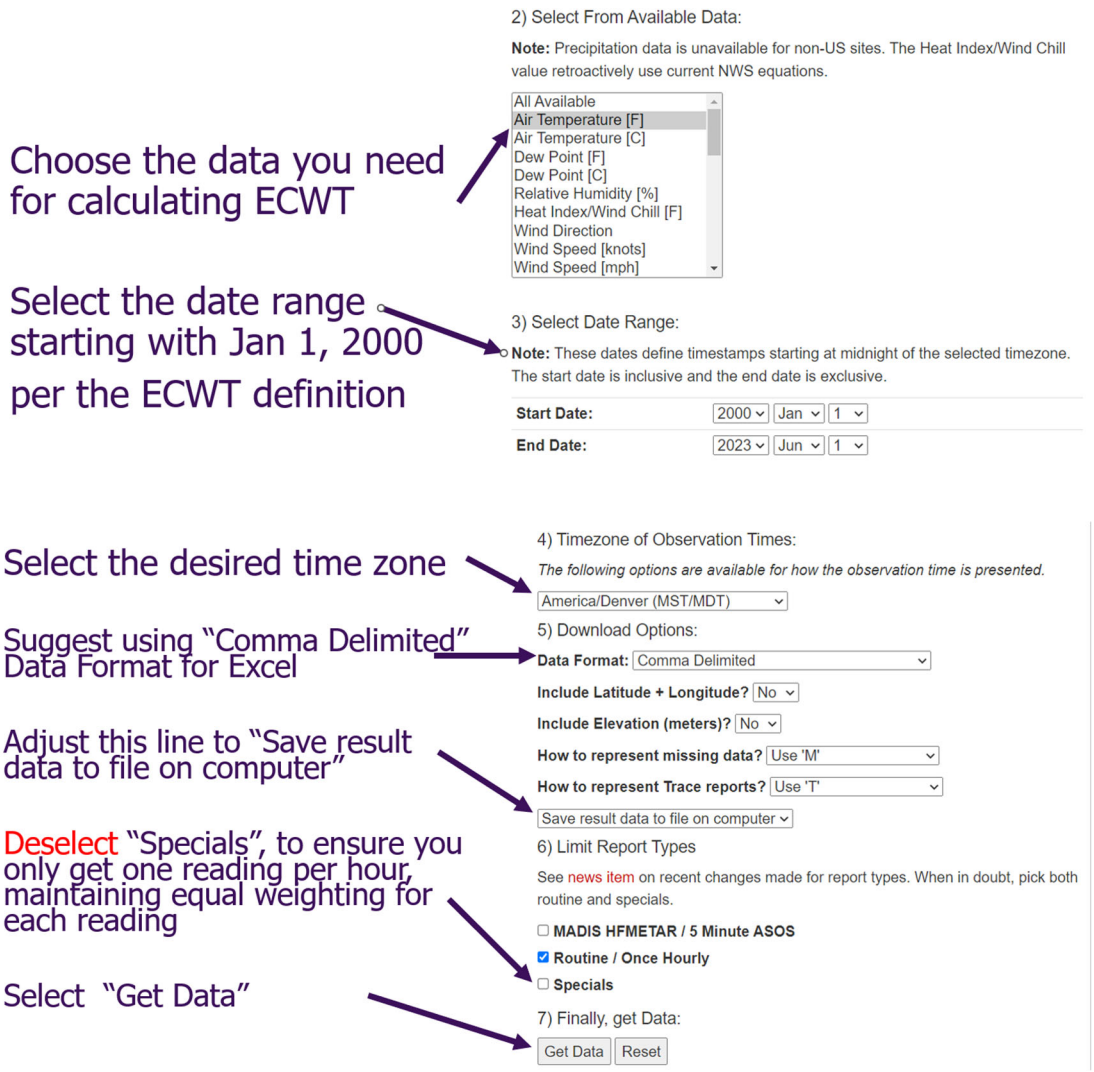
Or can just scroll and choose the station desired.

Select "+Add Selected"



At this point you can select data types, date ranges, time zones, data formats, download options, and report types. Note that some data types may not be available for the location. As discussed with the NOAA example, if hourly values for temperature are not available, document in your methodology or support documents how that is managed. It is important to note what may be missing/corrupt and how you approach that condition. As of yet, no criteria has been set to indicate how much can be missing (or present) to be considered an appropriate calculation of ECWT. Use professional judgement and present it in the best way possible if asked.

Make sure you understand the "Notes" ASOS provides when selecting data.

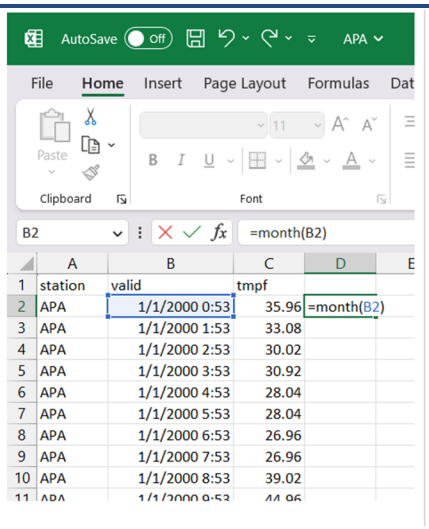


Note the "Deselection" verbiage as this could lead to possible erroneous ECWT calculations if left selected. By removing the Specials, the data set will have fewer duplicate readings in the data set.

After selecting "Get Data" you should receive a download with the filtered data. It is important to retain this raw file. The file should conatin every hour for every month for the Date Range selected. This helps preserve the documentation to demonstrate the means by which you arrived at the ECWT you determine.
The ECWT definition only requires the months of December, January, and February to be selected. Once you have the comma delimited file, save it as an Excel worksheet. Then use the "MONTH" function to provie a simple numeric value (e.g., January = 1, February = 2, etc) and then filter on 1, 2, and 12 to get the three months required by the ECWT definition.

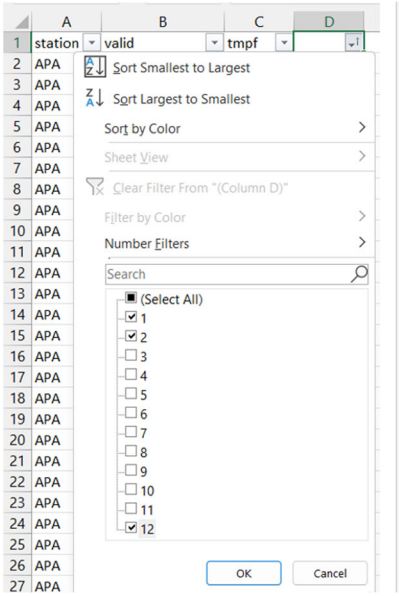
ECWT only uses the months of January, February and December.

Use the MONTH function to get a numeric value in an empty column and then copy that formula down through the end of the data set. Other filtering options can be used.



	A	B	C	D
1	station	valid	tmpf	
2	APA	1/1/2000 0:53	35.96	=month(B2)
3	APA	1/1/2000 1:53	33.08	
4	APA	1/1/2000 2:53	30.02	
5	APA	1/1/2000 3:53	30.92	
6	APA	1/1/2000 4:53	28.04	
7	APA	1/1/2000 5:53	28.04	
8	APA	1/1/2000 6:53	26.96	
9	APA	1/1/2000 7:53	26.96	
10	APA	1/1/2000 8:53	39.02	

Once a numeric value is produced you can simply use excel filters.



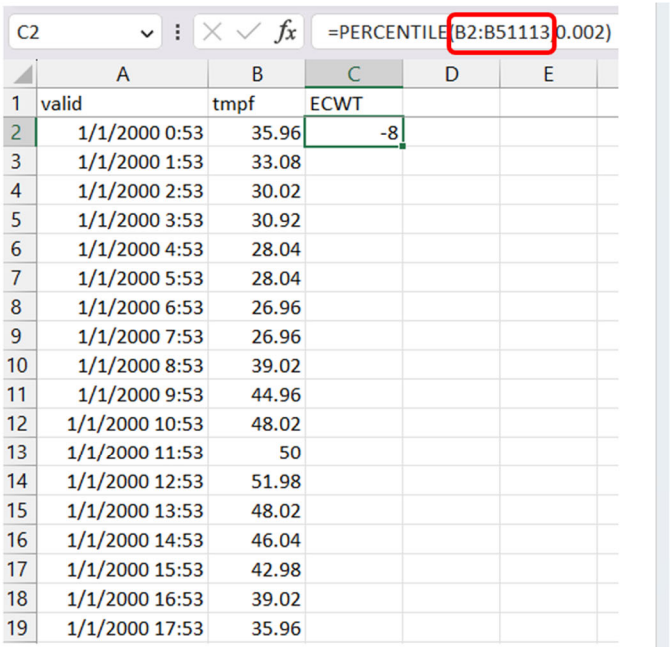
It is suggested that you highlight and copy the filtered data to another worksheet or file. Again, if moving the data to a separate spreadsheet be sure to maintain this original file for documentation.

When you paste the data into the new worksheet, you will have the the data from December, Janauary and February from all years needed to caculate ECWT. Add the Microsoft Excel function "PERCENTILE" to a new cell with the proper percentile value from the ECWT definition (i.e. "0.2 percentile" which for Excel is .002)). Make sure you capture your complete data set. (Example: =PERCENTILE(B:B,.002))

Compute the ECWT using the PERCENTILE function in Excel:

=PERCENTILE(range,0.002)

Ensure your range includes all the data points (e.g., B2:B51113 in the example)



	A	B	C	D	E
1	valid	tmpf	ECWT		
2	1/1/2000 0:53	35.96	-8		
3	1/1/2000 1:53	33.08			
4	1/1/2000 2:53	30.02			
5	1/1/2000 3:53	30.92			
6	1/1/2000 4:53	28.04			
7	1/1/2000 5:53	28.04			
8	1/1/2000 6:53	26.96			
9	1/1/2000 7:53	26.96			
10	1/1/2000 8:53	39.02			
11	1/1/2000 9:53	44.96			
12	1/1/2000 10:53	48.02			
13	1/1/2000 11:53	50			
14	1/1/2000 12:53	51.98			
15	1/1/2000 13:53	48.02			
16	1/1/2000 14:53	46.04			
17	1/1/2000 15:53	42.98			
18	1/1/2000 16:53	39.02			
19	1/1/2000 17:53	35.96			

In the above example, the ECWT is -8 (cell C1) based on the data in column B. Essentially you have completed your ECWT at this point, but it is important to do a quality check or other validation effort. You want to make sure you have the most complete set of data that is as free of errors as possible to determine the ECWT.

To help ensure data quality assurance you should evaluate how many hours of data you might expect for the given year an ECWT is being calculated. Using the "COUNTA" Excel function and the data range will provide a value but a check on that value is encouraged. The basic premise is to calculate the number of "full" years by 90 (the number of days i.e., January and December have 31 and February has 28) by 24 (number of hours in a day) plus the number of past leap years (years with 29 days in February) by 24 (number of hours in a day) plus the number of days in January and February for the current year by 24 (number of hours in a day). Note: "Full" years is inclusive of 2000. It is not stated in the Standard but when recalculating the ECWT, you are encouraged to recalculate ***after*** February has passed and before December of the year in which you are recalculating to provide the most up to date information.

Effectively, if this example is used, the calculation for March 2024 would look like:

(24X90X24) + (6X24) + (60X24) = 53424 data points where "full" years is 24 for 2000-2023, leap years included in the calculation is 7 (2000, 20004, 2008, 2012, 2016, 2020 and 2024), and days in the current year is 59 (January is 31 and February is 28 with February 29 accounted for in the leap years). Other methods can be used of course but make sure you retain how you came up with the value.

If you noticed ASOS provides filters for missing data but may not capture missing hours. You can use Excel in a variety of ways to verify if the number of hours accounted for in the data range selected. To the point made earlier, all hours may not be available for an ECWT calculation due to a variety of issues. If a large number of hours are missing, consider using other weather stations within close proximity or the combination of NWS/NOAA and ASOS data (regardless of what your primary data source is) in an attempt to capture a fuller data set. The key is

documenting what is missing and what you did with your approach. To date there has not been an approach to determine the statistical significance "margin" for ECWT.

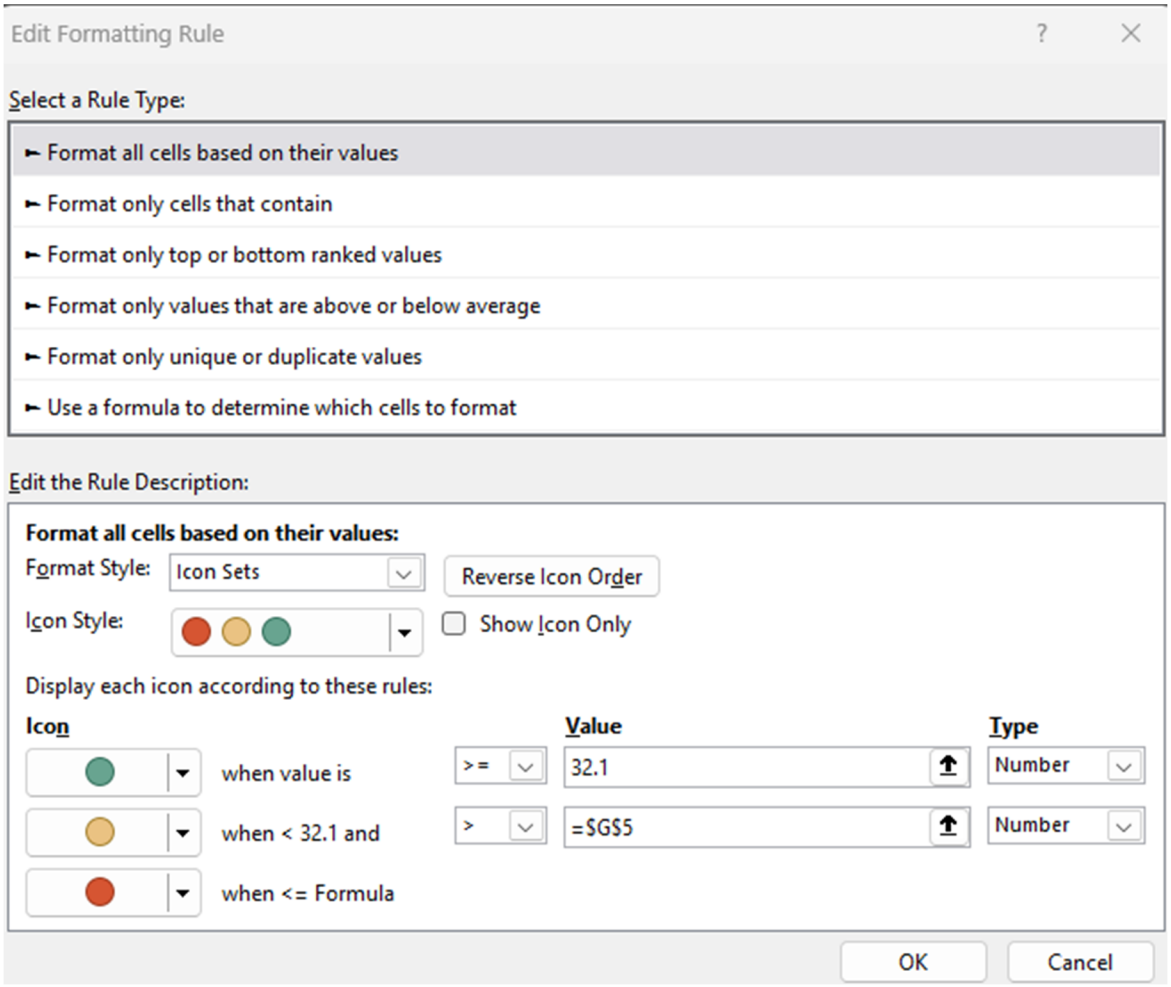
Excel also provides the ability to visualize when temperatures drop below ECWT, hover around ECWT, or exceed ECWT if more analysis is needed. This visualization, in conjunction with your efforts to find missing hours may provide insight for your approach to missing data. In any case, document what you have done.

valid	Month	tmpf	Time Check	ECWT	Data Points	Missing Data Points
1/1/2000 8:56	1	42.8		**6.000**	53247	177
1/1/2000 9:56	1	46	1.00			
1/1/2000 10:56	1	57	1.00	Reord low temp		-17
1/1/2000 11:56	1	68	1.00	Maximum		
1/1/2000 12:56	1	72	1.00	6,603.00		
1/1/2000 13:56	1	72	1.00	Minimum		
1/1/2000 14:56	1	72	1.00	0.05		
1/1/2000 15:56	1	71	1.00			
1/1/2000 16:56	1	69	1.00			
1/1/2000 17:56	1	65	1.00			

This picture shows one way that can be used to verify the data is reasonably complete. The Data Points of 53,247 is compared to the total number of hours that are included from January 1, 2000 through February 29, 2024 of 53, 424. The Data Points number is found by using the =COUNT function and highlighting the data in the "tmpf" column.

To evaluate the missing data points, the Time Check column compares the time shown on the row above with the time on that row. The formula for this is =(B6-B5)*24. If the results of this formula is less than 1, there is possibly duplicate readings for that hour. If the result is 2 or more, it indicates that there are missing data points. Note that the first hour each December will be 6601 or greater since we do not use any hours March through November. Use Conditional Formatting in the Time Check column to highlight cells with numbers less than 0.9 and greater than 1.1 to quickly identify missing or duplicate data points.

You can also use Conditional Formatting to identify hours that are above freezing, below freezing but above the ECWT and temperatures equal to or below the ECWT. This can help determine if the missing data points are likely to cause a change in the ECWT. This shows the Conditional Formatting rule assuming the ECWT is shown in cell G5:


Edit Formatting Rule
Select a Rule Type:
Format all cells based on their values
Format only cells that contain
Format only top or bottom ranked values
Format only values that are above or below average
Format only unique or duplicate values
Use a formula to determine which cells to format
Edit the Rule Description:
Format all cells based on their values:
Format Style:
Icon Sets
Reverse Icon Order
Icon Style:
Show Icon Only
Display each icon according to these rules:
Icon
Value
Type
when value is
>=
32.1
Number
when < 32.1 and
>
=$G$5
Number
when <= Formula
OK
Cancel

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2024-03 Revisions to EOP-012-2

Final Documents Posted

Now Available

In June 2024, the Federal Energy Regulatory Commission (FERC) approved Reliability Standard EOP-012-2 and directed NERC to submit a revised version to address and clarify several aspects within nine months of the date of the order.

In consideration of FERC's deadline and the importance of this standard, the Board invoked its authority under Section 321.5 of NERC's Rules of Procedure. Under this authority, the Board directed the Standards Committee, with the assistance of stakeholders and NERC staff, to prepare a responsive standard, which was then posted for a 45-day public comment period. This comment period concluded March 12, 2025.

Based on comments received, revisions have been made to the standard. The final documents are posted on the project page.

The NERC Board of Trustees will convene a special meeting on April 4, 2025 to review the standard and the complete record of developing, including the comments submitted during the public comment period, to determine next steps.

For information on the Standards Development Process, refer to the Standard Processes Manual.

For more information or assistance, contact Senior Standards Developer, Ben Wu (via email) or at 470-542-6882.

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NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Agenda
Board of Trustees Meeting

April 4, 2025 | 10:30 – 11:30 a.m. Eastern
Virtual Meeting

WebEx Link: Join Meeting
Password: BoardATT0425 (26273288 when dialing from a phone)
Audio Only: +1-415-655-0002 US | +1-416-915-8942 Canada | Access code: 2304 375 0829

NERC Board of Trustees

Suzanne Keenan, Chair
George S. Hawkins, Vice Chair
Jim Piro
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Kenneth W. DeFontes Jr.
Robin E. Manning
James B. Robb – President and Chief Executive Officer

Introduction and Chair's Remarks

NERC Antitrust Compliance Guidelines

Agenda Items

1. **Project 2024-03 Revisions to EOP -012 – 2 Extreme Cold Weather Preparedness and Operations – Approve**
2. **Closing Remarks and Adjournment**

*Background materials included.

Project 2024-03 Revisions to EOP-012-2 – Extreme Cold Weather Preparedness and Operations.

Action

Find, based on the recommendation of NERC Management, that the proposed Reliability Standard EOP-012-3, as modified considering the comments received, is just reasonable, not unduly discriminatory or preferential, and in the public interest.

Approve the following standards documents and authorize staff to file with applicable regulatory authorities, with a request that they be made effective:

- Reliability Standard – EOP-012-3 – Extreme Cold Weather Preparedness and Operations

  [EOP-012-3 Standard] [Redline to last approved] [Redline to last posted]

- Revised Defined Term for Inclusion in the *Glossary of Terms used in NERC Reliability Standards*

  See EOP-012-3 Reliability Standard

- Implementation Plan

  [EOP-012-3 Implementation Plan] [Redline to last posted]

- Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs)

  [VRF/VSL Justification]

- Retirement

  EOP-012-2 – Extreme Cold Weather Preparedness and Operations]

Background

NERC developed the original version of the generator cold weather preparedness Reliability Standard, Reliability Standard EOP-012-1, in 2022 under Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination. The purpose of this project was to address standards-related recommendations from the joint Federal Energy Regulatory Commission (FERC or Commission)/NERC/Regional Entity staff review of operations during the February 2021 Winter Storm Uri event[1].

NERC developed Reliability Standard EOP-012-2 in 2023-2024 to address Commission directives from the February 2023 Order approving Reliability Standards EOP-012-1 and EOP-011-3.[2] In the February 2023 Order, the Commission directed that NERC revise EOP-012-1 to clarify the applicability of the standard's requirements for generator cold weather preparedness, further define the circumstances under which a Generator Owner may declare that constraints preclude them from implementing one or more corrective actions to address freezing issues, and to

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[1] *See* The February 2021 Cold Weather Outages in Texas and the South Central United States | FERC, NERC and Regional Entity Staff Report.

[2] *N. Am. Elec. Reliability Corp.*, 182 ¶ 61,094 (2023) ("February 2023 Order").

shorten the implementation timeline so cold weather reliability risks would be addressed more quickly. NERC filed the revised standard and associated documents in February 2024.

On June 27, 2024, FERC issued an Order approving Reliability Standard EOP-012-2.[3] While finding Reliability Standard EOP-012-2 represented an improvement over the prior version and addressed many of its concerns, FERC found the standard required further improvement to address certain concerns remaining from its February 2023 Order. FERC therefore directed NERC to revise the standard in five areas and to submit a revised standard within nine (9) months of the date of the Order, or by March 27, 2025.

Specifically, FERC directed NERC as follows:

- **Paragraph 47:** Address ambiguities regarding the term Generator Cold Weather Constraint and criteria.
- **Paragraph 54:** Address concerns regarding the need for a timely review and evaluation of declared Generator Cold Weather Constraints by NERC.
- **Paragraph 68:** Address concerns that existing EOP-012-2 Requirement R7 allows too much time for entities to implement corrective actions for existing or new equipment or freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event.
- **Paragraph 70:** Address the finding that any extensions of a Corrective Action Plan implementation deadline beyond the maximum implementation timeframe provided by the standard be pre-approved by NERC (*related*: **paragraph 3**, relating to notifications of operating limitations applying during the period of the extension).
- **Paragraph 72:** Address the finding that generators that are first commercially operational on or after October 1, 2027 should have freeze protection measures either designed into their generating systems, or, if a Corrective Action Plan is needed, then it should be completed by the time that such generating units go into commercial operation.
- **Paragraph 76:** Address concerns that EOP-012-2 Requirement R7 has ambiguities in the Implementation Plan timelines that apply to certain Generator Owners.
- **Paragraph 94:** Address the concern that Generator Cold Weather Constraint declarations should be reviewed more frequently than once every five years to ensure the constraint remains valid.

After several months of expedited standards development proceedings that failed to produce a consensus standard responsive to the June 2024 Order directives, the Board of Trustees (Board) took action at its January 10, 2025 meeting to initiate the special standard development rule described in Section 321.5 of the NERC Rules of Procedure. Under this rule, the Board directed the Standards Committee to work with stakeholders and NERC staff to prepare a draft standard responsive to the June 2024 Order directives, to post that standard for a 45-day public comment period, and to present the standard and the record of development to the Board for its consideration.

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[3] *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61, 204 (2024) ("June 2024 Order").

On March 20, 2025, NERC filed a request with the Commission seeking an extension of time to file a responsive standard as late as April 14, 2025, citing the standard development proceedings and the need to give due consideration to all comments received later in the development process.

Summary

In this proceeding under Section 321.5, NERC Management is asking the Board to make a specific finding that proposed Reliability Standard EOP-012-3, as presented with certain modifications from the prior posted version, is just reasonable, not unduly discriminatory, and in the public interest in determining appropriate next steps.

Consistent with the directives of the FERC June 2024 Order, Reliability Standard EOP-012-3 would revise the currently effective standard as follows:

- Provide clear, objective, and sufficiently detailed criteria for determining the limited circumstances under which a Generator Owner could declare constraints that would preclude them implementing a specific corrective action to address freeze protection issues, referred to as Generator Cold Weather Constraints, with certain constraints being considered "known" constraints and subject to validation, and others being subject to - case-by-case approval depending on the facts and circumstances (*revised definition of Generator Cold Weather Constraint; new Attachment 1*);
- Require each Generator Owner declaring a Generator Cold Weather Constraint to submit the declaration to its Compliance Enforcement Authority for review in a timely manner (*Requirement R8*);[4]
- Require that Generator Owners review their validated Generator Cold Weather Constraints at least once every 36 calendar months for continued validity, instead of at least once every five calendar years, to ensure that new technologies are considered and circumstances preventing implementation are reevaluated on a regular basis (*Requirement R9)*;
- Provide shorter deadlines for Generator Owners to implement Corrective Action Plans developed in response to Generator Cold Weather Reliability Events, so that known freezing issues are addressed more quickly (*Requirement R6*);
- Require that any extension of a Corrective Action Plan implementation deadline beyond the maximum implementation timeframe provided by the standard be pre-approved by the Compliance Enforcement Authority (*Requirements R6, R7*);
- Reinforce that Generator Owners must update their generating unit cold weather operating limitations while any Corrective Action Plan is pending completion (*Requirement R7*);
- Require Generator Owners with new Bulk Electric System generating units entering commercial operation on or after October 1, 2027 to have the required cold weather capability upon entering commercial operation, unless a Generator Cold Weather Constraint would apply (*Requirement R2*); and

[4] As discussed herein, the EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process would ensure that these submissions are reviewed by the Compliance Enforcement Authority in a timely manner.

- Clarify requirements for Corrective Action Plan timeline applicability, as identified by the Commission in the June 2024 Order (*Requirements R6, R7*).

Consistent with the discussions at the January 10, 2025 Board meeting, NERC proposes a compliance abeyance period for proposed EOP-012-3 Requirement R1 Part 1.1 to address concerns raised during standards development regarding the calculation of the Extreme Cold Weather Temperature. This provision would provide a two year period during which the Compliance Enforcement Authority would not pursue formal actions against those failing to comply Requirement R1 Part 1.1 with respect to the calculation of the Extreme Cold Weather Temperature or any related noncompliance, provided they were acting in good faith to comply with the standard in accordance with the implementation plan. *See* Section C. Compliance, Compliance Monitoring Process 1.4. Compliance Abeyance Period.

Standards Development Process

The Standards Committee initiated Project 2024-03 Revisions to EOP-012-2 on July 17, 2024. At that meeting, the Standards Committee also approved procedural waivers under the Standard Processes Manual to reduce the time provided for comment periods and ballots given the short FERC deadline for completion.[5]

The drafting team met approximately 22 times from August 22, 2024 through January 9, 2025 to modify the EOP-012-2 standard and associated documents based on the FERC June 2024 Order directives (including three in-person meetings and a technical conference). The initial 20-day formal comment and ballot was conducted from October 17 – November 5, 2024. The initial EOP-012-3 draft received an approval of 42.29% and 90.98% quorum. The Implementation Plan received an approval of 45.86% and 91.25% quorum. The drafting team made additional changes to the standard based on comments received. The additional draft received an approval of 44.54% and 88.93% quorum, and the Implementation Plan received a 59.7% approval and 89.58% quorum.

Due to a combination of factors, including the lack of meaningful consensus improvement across two successive ballots, the Board took action at its January 10, 2025 meeting to initiate the special standard development rule described in Section 321.5 of the NERC Rules of Procedure. NERC staff worked with a small group of volunteers from the Standards Committee to address the Board's resolutions and prepare a third draft of the proposed EOP-012-3 standard. Members from the Project 2024-03 drafting team participated to provide background and context for their recommendations. The group met from January 13 – January 21, 2025. Using as a starting point the final recommendations of the original EOP-012-3 drafting team, the group discussed the following additional changes:

- Clarifications to known Generator Cold Weather Constraints that would require validation, but not case-by-case approval;
- Structural and original equipment manufacturer limitations;
- Shorter deadlines to implement corrective actions;

[5] Under the approved waiver, the time period for the informal standard authorization request comment period was reduced from 30 days to as few as 15 days; informal comment period and initial ballot reduced from 45 days to as little as 20 days, with a 5 day ballot and concurrent poll of the Violation Risk Factors and Violation Severity Levels; additional formal comment period and ballot periods reduced from 30 days to as little as 15 days, with 5 day ballots; and the final ballot reduced from 10 days to as little as 5 days.

- Clarification on processes when experiencing Generator Cold Weather Reliability Event; and
- Providing additional clarification in the Technical Rationale document.

Consistent with the Board's resolution, the third draft of proposed EOP-012-3 was posted for a 45-day comment period from January 27, 2025 to March 12, 2025, with no accompanying ballot. During the comment period, NERC received 43 sets of responses, including comments from approximately 108 different people from approximately 77 companies representing 7 of the industry segments.

NERC staff worked with the Standards Committee volunteers to develop recommended revisions to address the comments received during the public comment period. NERC Management recommends the Board approve the draft EOP-012-3 standard with the recommended revisions summarized below.

Consideration of Comments: Rule 321 Public Comment Period

The following is a brief summary of the comments received during the Rule 321 public comment period and how they were, or were not, addressed in the final draft EOP-012-3 that is presented for the Board's approval. The Consideration of Comments provides the original comments along with a detailed response to each commenter explaining how their comment was considered. The Consideration of Comments for the two prior postings are available on the project page.

Comments regarding the Definition of Generator Cold Weather Constraint and the List of Constraints included in new Attachment 1

Background: Draft EOP-012-3 would revise the definition of Generator Cold Weather Constraint to remove reference to "costs" and other terms the FERC June 2024 Order found ambiguous, and create a new Attachment 1 to list the constraints that, if present and confirmed, would be considered valid ("known") constraints, and the constraints that, depending on the facts and circumstances and subject to pre-approval, could be considered constraints ("case-by-case" constraints).

Comments included the following suggestions:

- Further revise the definition of Generator Cold Weather Constraint to better reflect the intent of the revised standard;
- Include a cost/benefit analysis to determine whether generators should be required to implement the required freeze protection measures;
- Add more or all of the "case-by-case" constraints to the "known" constraints list for which validation, rather than pre-approval, is required;
- Further elaborate on how the ERO Enterprise will review economic constraints; and
- Extend the sunset date for the generator wind turbine tower "known" constraint past 2029/2031 to 2035 or later, based on expected timelines for development, testing, and deployment of new technologies.

Response: The proposed definition of Generator Cold Weather Constraint is revised to clarify the scope of freeze protection measures that may be precluded by a constraint. To help ensure that economic constraints are being declared only when warranted, the final draft of EOP-012-3 adds

a requirement for Generator Owners to submit an attestation signed by an officer of the company when declaring these constraints, along with its supporting analysis.

Other suggestions for changes were declined. No references to "cost/benefit" were added, as the June 2024 Order specifically directed NERC to remove all references to "cost", "reasonable cost", and "unreasonable cost". No further changes were made to the organization of possible constraints, as it is believed that further scrutiny of the facts and circumstances would be required for each of the "case-by-case" constraints; based on the EOP-012 proceedings conducted to date. No further changes are made to the wind turbine tower "known" constraint, so as to avoid unintentionally disincentivizing the prompt development of technologies that would address known issues with wind turbine towers.

Comments Regarding the Proposed Revision to Requirement R1 Part 1.1

Background: Previous drafts of proposed EOP-012-3 added language intended to clarify that the Generator Owner has flexibility to address gaps in available data weather sets for calculating the Extreme Cold Weather Temperature. This language was intended to address comments indicating potential compliance concerns when using imperfect data sets.

Comments included the following suggestion:

- Remove the added language so that a separate standards development project could address the issue.

Response: No change to the proposed language was made in the final draft of EOP-012-3 as it substantially addresses the originally identified compliance concern. The ERO Enterprise will use a compliance abeyance period to gather information on this calculation that might inform future standards revisions and help ensure that any calculation issues that are identified in the abeyance period are identified and addressed sooner than they might be if they were discovered during the normal course of compliance monitoring activities.

Comments on Compliance Enforcement Authority (CEA) process for reviewing declared Generator Cold Weather Constraints and Corrective Action Plan extension requests

Background: NERC developed the draft EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process to provide information on how NERC will ensure the timely review of Corrective Action Plan extension requests and declared Generator Cold Weather Constraints consistent with the June 2024 Order. The process is not part of the proposed EOP-012-3 standard but has been posted along with the draft EOP-012-3 standard for informational purposes.

Comments included the following concerns:

- Concerns about timeliness of reviews under the process;
- Concerns about impacts on other compliance obligations if requests are denied;
- Concerns that the ERO Enterprise does not have sufficient resources or expertise to review declared constraints; and
- Concerns regarding the need to ensure consistency in determinations across the ERO Enterprise.

Comments also included the following suggestions:

- The ERO Enterprise establish expectations regarding the documents and information that would be required to be submitted;
- Embed the review process in the standard, instead of retaining as a separate document that is maintained through the Compliance Monitoring and Enforcement Program;
- Approve extension requests if not responded to by the CEA within a set period; and
- Require the Reliability and Security Technical Committee (RSTC) complete each extension review instead of the CEA.

Response: NERC revised the draft EOP-012-3 Generator Cold Weather Corrective Action Plan (CAP) Extension and Constraint Process and will be working to provide additional guidance and transparency to industry on the types of requests that are being approved and the types of documentation that will aid the ERO Enterprise in making these determinations in a timely manner.

Other suggestions were declined. Suggestions to include the process in the EOP-012-3 standard were declined, as Compliance Monitoring and Enforcement Program (CMEP) processes are maintained independently outside of Reliability Standards that establish obligations for users, owners, and operators of the Bulk-Power System.

Suggestions to add an automatic pre-approval clause were declined as inconsistent with the June 2024 Order directing NERC to review and validate all declared constraints. A suggestion to have the RSTC complete the review was declined, as it is outside the scope of the RSTC as a technical forum to perform CMEP responsibilities that are the responsibility of the ERO Enterprise.

Concerns about Corrective Action Plan Development/Implementation Timelines for Generator Cold Weather Reliability Events (Requirement R6)

Background: Consistent with the June 2024 Order, the draft EOP-012-3 standard proposed an expedited timeframe for the completion of Corrective Action Plans developed to address Generator Cold Weather Reliability Events. Consistent with FERC guidance in the June 2024 Order, NERC developed a requirement for Generator Owners to implement corrective actions on the unit experiencing the event by the start of the next winter season.

Comments included the following suggestions:

- NERC create a uniform deadline for Corrective Action Plan completion (e.g. 12 months), instead of specifying completion prior to the next winter season;
- Add clarification as to what might constitute an "early season" event for Corrective Action Plan timeline purposes; and
- Consolidate the timelines for Corrective Action Plan development and completion for affected units, which are the same (i.e. prior to the start of the next winter season).

Response*:* The final draft EOP-012-3 standard is revised to clarify what constitutes an early season event for Corrective Action Plan timeline purposes. Consistent with the recommendation in the June 2024 Order, the final draft EOP-012-3 retains the deadline to implement corrective actions on a generating unit experiencing a Generator Cold Weather Reliability Event prior to the next winter season. This requirement would help ensure those units do not remain vulnerable to known freezing issues for a significant part (or even all) the following winter season. The

suggestion to consolidate timelines was declined, as it is clearer to maintain separate provisions addressing the development and completion of Corrective Action Plans, even if the dates are the same.

Requirement R2 Addressing Requirements for New Generating Units (Oct. 1, 2027 and later)
Background: To address the FERC directive in the June 2024 Order, earlier drafts of EOP-012-3 proposed to remove the option to develop a Corrective Action Plan for most new generating units entering commercial operation on or after October 1, 2027. Given the differences across standard versions, industry participants indicated support for NERC preserving a limited opportunity for certain generators who completed design of their units prior to EOP-012-1 approval but who would not enter commercial operation before October 1, 2027 to implement a Corrective Action Plan over the course of winter 2027-2028.

Comments included the following concerns:

- The inclusion of certain U.S.-specific dates in the standard might conflict with the dates in effect in Canadian provinces;
- The dates that were used for proposed Requirement R2 would apply to the various generators and options described in Parts 2.1 and 2.2, and could unintentionally leave compliance gaps for other new generators;
- The Corrective Action Plan option was too short-lived to be of any practical use for those generators that might seek to use it; and
- As written, entities may construe the various dates to require retroactive performance under the standard.

Response*:* After review of the comments, it was determined that the issue sought to be addressed through Requirement R2 in prior drafts of EOP-012-3 was fundamentally an implementation issue, and as such, it would be best addressed in the implementation plan rather than in the standard itself. In the final draft EOP-012-3, Requirement R2 is revised and streamlined consistent with the June 2024 Order, and the limited phased-in compliance provision for certain new generators is included in the revised implementation plan.

Requirements R8 and R9 Addressing the Declaration of Generator Cold Weather Constraints and Submission to the CEA for Review, and Requirements for Periodic Re-review of Validated Constraints
Background: To address the June 2024 Order, proposed EOP-012-3 includes requirements for the timely submission of declared Generator Cold Weather Constraints to the Compliance Enforcement Authority. It also shortens the timeframe required for periodic reviews of validated constraints to 36 calendar months from five calendar years, which was thought to be a reasonable balance between the need to stay abreast of new technologies and the general pace of technological development.

Comments included the following suggestions:

- Clarify how the various requirements for Corrective Action Plans and Generator Cold Weather Constraint submissions would apply, particularly where repeat issues occur;
- Clarify or edit the processes required when an entity determines if its constraint is no longer valid or needs amendment;

- Revise the standard to require an entity to initiate an off-cycle review of their declared constraint following receipt by a regulatory authority that a material fact underlying their constraint has changed, such as the development of a new freeze protection technology that might obviate the need for the constraint; and
- Require Generator Owners to report the results of their periodic constraint reviews to the Compliance Enforcement Authority.

***Response**:* The final draft EOP-012-3 revises Requirement R8 to clarify the required performance when multiple issues occur due to known causes and the possible solutions are addressed by validated constraints. Other comments seeking clarifications are addressed in the full consideration of comments.

The suggestion to add language regarding off-cycle reviews following a regulatory notification was declined, as it was not thought to be workable for all contexts in which Generator Owners may declare constraints under the standard. However, NERC staff appreciates the suggestion and will consider if the Alerts process or another option in NERC's reliability toolkit may be appropriate for keeping Generator Owners apprised of new developments that may impact their declared constraints and warrant an off-cycle review.

Minority Issues

In addition to the specific issues summarized above, NERC received minority comments indicating continued concern with aspects of the standard that were addressed in prior EOP-012 development and approval proceedings, including consistency with the Market Interface Principles and requiring Generator Owners to implement freeze protection measures that may not be justified from the Generator Owner's cost/benefit analysis.

Pertinent FERC Directives

This project addresses the following directives from the June 2024 Order, including paragraphs 47, 54, 68, 70 (related: paragraph 3), 72, 76, and 94.

Cost Effectiveness

The drafting team sought stakeholder input on the cost effectiveness of the proposed standards during the formal comment periods. Consistent with comments received during prior comment periods for prior versions of the EOP-012 standard, several commenters stated that implementing the required freeze protection measures could be very costly for Generator Owners. Proposed EOP-012-3 balanced these interests in a manner that is consistent with and responsive to the concerns underlying the FERC directives in the June 2024 Order as well as the findings and recommendations of the Winter Storm Uri report that prompted the development of the EOP-012 standard in the first instance. Proposed EOP-012-3 seeks to balance concerns about the need for reliability oversight of the EOP-012-3 standard while minimizing administrative reporting burdens to the extent practicable.

Additional Information

A link to the project history and files is included here for reference:
[Project 2024-03 Revisions to EOP-012-2]

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Standards Actions

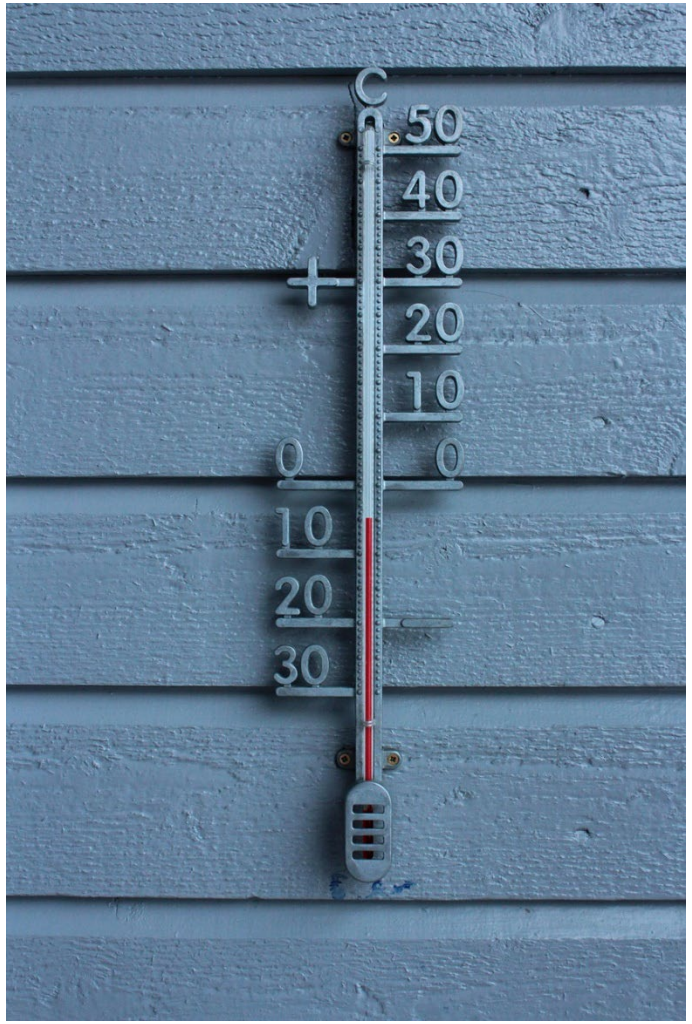
Project 2024-03 Revisions to EOP-012-2 – Extreme Cold Weather Preparedness and Operations

Soo Jin Kim, Vice President, Engineering, Standards, and PRISM

Board of Trustees Meeting

April 4, 2025

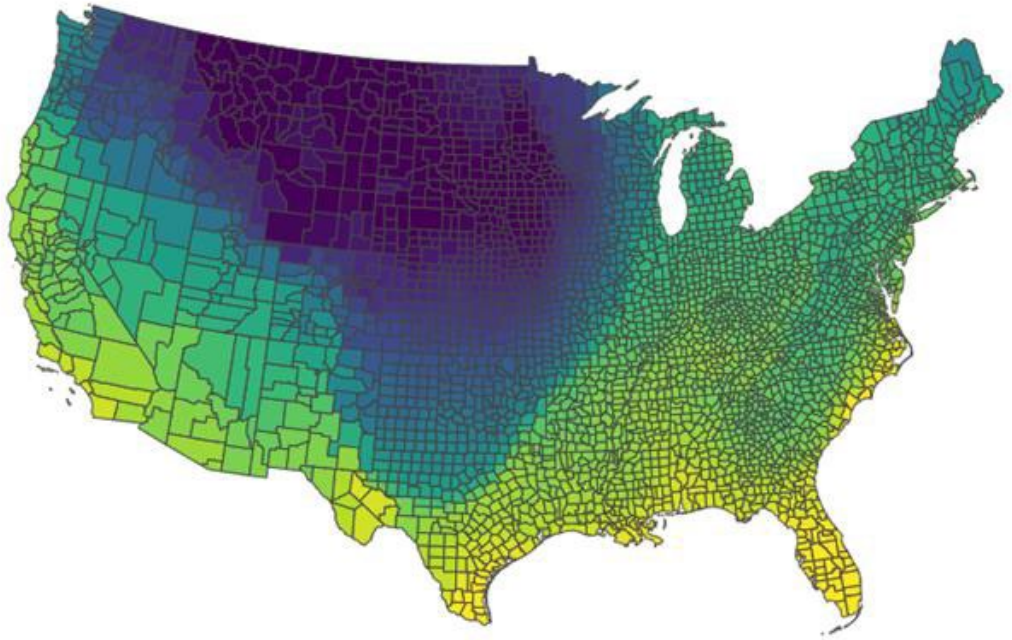
Project 2024-03 Revisions to EOP-012-2



- Reliability Benefits
  - Clarifies the Generator Cold Weather Constraint
  - Enhances requirements for corrective action plans (CAP) and timelines
  - Requires CAP extension be pre-approved by the Compliance Enforcement Authority
  - Requires cold weather capability for new units as of COD

Project 2024-03 Revisions to EOP-012-2

- Revisions from ROP 321 Posting Comments:
  - Revised Generator Cold Weather Constraint definition
  - Clarification on early season CAPs
  - Attestation added in “Case-by-case” constraints
  - EOP-012-3 Generator Cold Weather CAP Extension and Constraint Process revisions
  - Implementation Plan updated
  - Compliance abeyance for ECWT



Project 2024-03 Revisions to EOP-012-2

- Action
  - Approve
    - Reliability Standard – EOP-012-3 – Extreme Cold Weather Preparedness and Operations

Questions and Answers

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Draft Minutes
Board of Trustees

April 4, 2025 | 10:30–11:30 a.m. Eastern
Virtual

Call to Order

Ms. Suzanne Keenan, Chair, called to order the duly noticed open meeting of the Board of Trustees (Board) of the North American Electric Reliability Corporation (NERC or the Corporation) on April 4, 2025, at approximately 10:30 a.m. Eastern, and a quorum was declared present.

Present at the meeting were:

Board Members
Suzanne Keenan, Chair
George S. Hawkins, Vice Chair
Jane Allen
Kenneth W. DeFontes, Jr.
Susan Kelly
Robin E. Manning
Jim Piro
James B. Robb, President and Chief Executive Officer
Kristine Schmidt
Colleen Sidford

NERC Staff
Tina Buzzard, Director, Board Operations and Corporate Governance
Manny Cancel, Senior Vice President and Chief Executive Officer of the E-ISAC
Jamie Calderon, Director, Standards Development
Shamai Elstein, Associate General Counsel
Howard Gugel, Senior Vice President, Regulatory Oversight
Kelly Hanson, Senior Vice President and Chief Operating Officer
Soo Jin Kim, Vice President, Engineering and Standards
Mark G. Lauby, Senior Vice President and Chief Engineer
Lauren Perotti, Assistant General Counsel
Sonia Rocha, Senior Vice President, General Counsel, and Corporate Secretary
Camilo Serna, Senior Vice President, Strategy and External Engagement

NERC Antitrust Compliance Guidelines

Ms. Buzzard directed the participants' attention to the NERC Antitrust Compliance Guidelines included in the advance agenda package and indicated that all questions regarding antitrust compliance or related matters should be directed to Mr. Elstein.

Introduction and Chair's Remarks

Ms. Keenan welcomed the attendees to the meeting. She noted that the purpose of the meeting is to consider the proposed Reliability Standard EOP-012-3 which completed development under the special processes for standards

provided in Section 321.5 of the NERC Rules of Procedure. Ms. Keenan noted that the Board did not take lightly the action before it. While the Board remains committed to the consensus process, NERC also has a responsibility to develop a standard to address an important reliability risk consistent with the Federal Energy Regulatory Commission (FERC) directives. Ms. Keenan thanked the Standards Committee and the industry volunteers who worked to develop the standard and address the numerous comments received from industry.

Ms. Keenan then reviewed the Board's responsibilities in making its decision. She noted that FERC has previously approved the general framework of the EOP-012 standard as just and reasonable, not unduly discriminatory or preferential, and in the public interest, while directing additional changes to clarify and improve the framework. The Board would therefore be focusing its attention on the changes to address these directives. Ms. Keenan reviewed the Board's obligation to make a finding that: (1) the applicable process was followed; (2) that the proposed standard appropriately considered all the comments provided throughout the process and addresses the FERC directives; and (3) that the proposed changes are just, reasonable, not unduly discriminatory or preferential, and in the public interest.

Ms. Keenan reported that the Board has received several materials from NERC Management to aid in its decision-making, including: (1) the industry comments from the final posting; (2) summaries of the approach taken, both procedurally and substantively; (3) an assessment of contrary positions and other comments considered; and (4) the legal criteria to be applied to its decision. She further noted that, given the information to be reviewed, the Board asked for additional time from FERC to make its determination.

Ms. Keenan then introduced Mr. Elstein to review the legal requirements. Mr. Elstein reviewed Section 321.5 of the NERC Rules of Procedure, which provides that the Board is authorized to approve a proposed Reliability Standard upon a finding that the standard, with such modifications as the Board determines appropriate in light of comments received, is just, reasonable, not unduly discriminatory or preferential, and in the public interest. Section 321.5 further states that in making such a determination, the Board should consider, among other things, whether the proposed standard is practical, technically sound, technically feasible, cost justified and serves the best interests of reliability of the bulk power system. Mr. Elstein also reviewed the factors identified by FERC in Order No. 672 in determining whether a proposed standard is just, reasonable, not unduly discriminatory, and in the public interest.

Project 2024-03 Revisions to EOP-012-2 Extreme Cold Preparedness and Operations

Ms. Kim reviewed the proposed Reliability Standard, noting that it addresses the FERC directives from the June 2024 order by clarifying the Generator Cold Weather Constraint framework, enhancing requirements for corrective action plans and timelines for addressing known freezing issues, requires any corrective action plan extensions to be approved by the Compliance Enforcement Authority, and requires new units entering commercial operation on or after October 1, 2027 to have the required cold weather capability by their commercial operation date.

Ms. Kim noted that there were several changes reflected in the proposed standard that were made in response to comments received during the Rules of Procedure Section 321.5 public comment period, including a revised definition of Generator Cold Weather Constraint, clarification of corrective action plan requirements, addition of an officer attestation requirement for certain economic Generator Cold Weather Constraints, and an updated implementation plan. She also noted that further revisions were made to the EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process, a document maintained by the Compliance Monitoring and Enforcement Program.

Ms. Kim reported that the proposed standard includes a two-year compliance abeyance period intended to identify and address issues related to the calculation of the Extreme Weather Temperature. She noted that this provision was included following numerous industry concerns related to this calculation earlier in the development process.

Ms. Keenan led a discussion of the proposed standard. Ms. Kelly, Standards Committee Liaison, remarked on the continued engagement of industry following the Board invoking Section 321.5 of the Rules of Procedure and expressed her appreciation for their hard work. She stated that the proposed standard balances the various viewpoints raised while advancing reliability and addressing the FERC directives, and it meets the required standard for approval. Mr. Manning, Regulatory Oversight Committee Chair, echoed his appreciation for the small team who considered the stakeholder comments as well as the stakeholders for their helpful and constructive comments. He stated that the standard meets the technically feasible and practicality tests, although much work remains to be done, and that it will advance reliability. Other Trustees similarly expressed their support for the proposed standard and appreciation to NERC's stakeholders for their participation in this important effort.

Ms. Schmidt invited participants in the meeting to raise any further concerns that should be brought before the Board. None were raised.

After discussion, and upon motion duly made and seconded, the Board approved the following resolutions:

WHEREAS, on November 1, 2021, the Board, noting the demonstrated risks to reliability posed by multiple cold weather events over previous years, resolved to direct the development of new or revised Reliability Standards to address the recommendations of the February 2021 Event joint inquiry report for cold weather preparedness, operations, and coordination on a high priority basis;

WHEREAS, the Federal Energy Regulatory Commission (FERC) issued an order approving Reliability Standards EOP-011-3 and EOP-012-2 by order dated February 16, 2023, while directing NERC to submit further revisions to EOP-012 within one year of the date of the order;

WHEREAS, the Board adopted Reliability Standard EOP-012-2 on February 16, 2024, developed to address the directives of the February 16, 2023 Order;

WHEREAS, FERC issued an order on June 27, 2024, approving Reliability Standard EOP-012-2 and directing NERC to further revise the EOP-012 standard to address issues not fully resolved from the February 16, 2023 Order, and to submit a revised standard by March 27, 2025;

WHEREAS, on January 10, 2025, the Board, considering the standards development proceedings conducted to that time, determined it necessary and appropriate to appropriate to employ the special processes described in Rule 321.5 of the NERC Rules of Procedure to develop a proposed draft EOP-012-3 standard that is responsive to the matters identified in the directives issued by FERC in its June 27, 2024 Order;

WHEREAS, the Board directed the Standards Committee, with the assistance of stakeholders and NERC staff, to prepare a draft Reliability Standard responsive to the directives in FERC's June 27, 2024 Order to be posted for public comment by no later than January 29, 2025;

WHEREAS, a draft EOP-012-3 standard was prepared and posted for public comment from January 27, 2025 to March 12, 2025, and during this comment period, NERC received 43 sets of responses, including comments from approximately 108 different people from approximately 77 companies representing 7 of the industry segments;

WHEREAS, to ensure that each of these comments would be given due consideration, NERC requested that FERC grant NERC a modest extension of its June 27, 2024 Order deadline, from March 27, 2025 to April 14, 2025;

WHEREAS, the Board hereby expresses its appreciation to the Standards Committee and to NERC's stakeholders in developing a proposed standard through the alternative consensus building process provided in Section 321.5 of the NERC Rules of Procedure, and for addressing the FERC directives in the June 27, 2024

Order in a manner that balances the various interests raised throughout the process;

WHEREAS, the Board has considered the developmental record for the draft EOP-012-3 standard, including the comments received during the recent posting, and the recommendations of NERC Management for further modifications in light of the comments received;

WHEREAS, the Board has considered NERC Management's recommendation that the proposed Reliability Standard EOP-012-3, with modifications, is practical, technically sound, technically feasible, cost justified, and serves the best interests of the reliability of the Bulk-Power System, for the reasons stated more fully in the development record and advance agenda materials;

NOW, THEREFORE, BE IT RESOLVED, that the Board, upon the recommendation of NERC Management, hereby finds that the proposed Reliability Standard EOP-012-3, with the modifications made in light of the comments received, is just, reasonable, not unduly discriminatory or preferential, and in the public interest;

BE IT FURTHER RESOLVED, that the Board hereby approves the proposed Reliability Standard EOP-012-3, as presented to the Board at this meeting;

BE IT FURTHER RESOLVED, that the Board hereby approves the revised definition of Generator Cold Weather Constraint for inclusion in the *Glossary of Terms used in NERC Reliability Standards*, as presented to the Board at this meeting;

BE IT FURTHER RESOLVED, that the Board hereby approves the Violation Risk Factors and Violation Severity Levels for the proposed Reliability Standard, as presented to the Board at this meeting;

BE IT FURTHER RESOLVED, that the Board hereby approves the associated implementation plan for the proposed Reliability Standard, as presented to the Board at this meeting.

BE IT FURTHER RESOLVED, that the Board hereby approves the proposed retirement of Reliability Standard EOP-012-2, as presented to the Board at this meeting.

BE IT FURTHER RESOLVED, that the Board hereby directs NERC Management to file the proposed Reliability Standard EOP-012-3 to the Applicable Governmental Authorities, with a request that it be made effective, and to take such further actions and make such further filings as are necessary and appropriate to effectuate the intent of the foregoing resolutions.

Other Matters and Adjournment

There being no further business, and upon motion duly made and seconded, the meeting was adjourned.

Submitted by,

Sônia Rocha
Corporate Secretary

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Exhibit I
Standard Drafting Team Roster

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Drafting Team Roster

Project 2024-03 Revisions to EOP-012-2

	Name	Entity
Chair	David Kezell	ERCOT
Vice Chair	Bradley Pabian (Brad)	Louisville Gas & Electric / Kentucky Utilities
Members	David McRee	Duke Energy
	Mike Herman	Great River Energy
	Thor Angle	Puget Sound Energy
	Jill Loewer	Utility Services
	Jonathan Davidson	City Utilities of Springfield Mo
	Alan Wahlstrom	Southwest Power Pool
	Scott Dennis Reinhold, Jr	Midcontinent Independent System Operator (MISO)
	William Curtis Crews	WECC
	Vincent (Vince) Stefanowicz	PJM Interconnection, LLC
	Venona Greaff	Occidental Chemical Corporation
	Pamela Frazier	Southern Power Company
PMOS Liaison	Ruida Shu	NPCC
	Charles Yeung	Southwest Power Pool
NERC Staff	Ben Wu – Senior Standards Developer	North American Electric Reliability Corporation
	Lauren Perotti -- Legal	North American Electric Reliability Corporation