

## Consideration of Comments

**Project Name:** 2019-06 Cold Weather | Standard Authorization Request

**Comment Period Start Date:** 10/4/2019

**Comment Period End Date:** 11/5/2019

There were 42 sets of responses, including comments from approximately 95 different people from approximately 76 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, please 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, you can contact Vice President of Engineering and Standards [Howard Gugel](#) (via email) or at (404) 446-9693.

## Questions

1. [Do you agree with the proposed scope as described in the SAR? If you do not agree, or if you agree but have comments or suggestions for the project scope please provide your recommendation and explanation.](#)
2. [Provide any additional comments for the SAR 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 |
|--|---------------|------------|---|------------------------------|-------------------|---|-------------------------|---------------------|
| Westar Energy                                  | Douglas Webb  | 1,3,5,6    | MRO,SPP RE                                    | Westar-KCPL                  | Doug Webb         | Westar  | 1,3,5,6                 | MRO                 |
|  |               |            |   |                              | Doug Webb         | KCP&L   | 1,3,5,6                 | MRO                 |
| Public Utility District No. 1 of Chelan County | Jeff Kimbell  | 1,3,5,6    |   | CHPD                         | Davis Jelusich    | Public Utility District No. 1 of Chelan County  | 6                       | WECC                |
|  |               |            |   |                              | Meaghan Connell   | Public Utility District No. 1 of Chelan County  | 5                       | WECC                |
|  |               |            |   |                              | Joyce Gundry      | Public Utility District No. 1 of Chelan County  | 3                       | WECC                |
| ACES Power Marketing                           | Jodirah Green | 1,3,4,5,6  | MRO,NA - Not Applicable,RF,SERC,Texas RE,WECC | ACES Standard Collaborations | Bob Solomon       | Hoosier Energy Rural Electric Cooperative, Inc. | 1                       | SERC                |
|  |               |            |   |                              | Kevin Lyons       | Central Iowa Power Cooperative                  | 1                       | MRO                 |

| Organization Name                     | Name          | Segment(s) | Region       | Group Name                | Group Member Name | Group Member Organization             | Group Member Segment(s) | Group Member Region |
|---------------------------------------|---------------|------------|--------------|---------------------------|-------------------|---------------------------------------|-------------------------|---------------------|
|                                       |               |            |              |                           | Bill Hutchison    | Southern Illinois Power Cooperative   | 1                       | SERC                |
|                                       |               |            |              |                           | Amber Skillern    | East Kentucky Power Cooperative       | 1                       | SERC                |
| DTE Energy - Detroit Edison Company   | Karie Barczak | 3,4,5      |              | DTE Energy - DTE Electric | Jeffrey Depriest  | DTE Energy - DTE Electric             | 5                       | RF                  |
|                                       |               |            |              |                           | Daniel Herring    | DTE Energy - DTE Electric             | 4                       | RF                  |
|                                       |               |            |              |                           | Karie Barczak     | DTE Energy - DTE Electric             | 3                       | RF                  |
| Duke Energy                           | Kim Thomas    | 1,3,5,6    | FRCC,RF,SERC | Duke Energy               | Laura Lee         | Duke Energy                           | 1                       | SERC                |
|                                       |               |            |              |                           | Dale Goodwine     | Duke Energy                           | 5                       | SERC                |
|                                       |               |            |              |                           | Greg Cecil        | Duke Energy                           | 6                       | RF                  |
| FirstEnergy - FirstEnergy Corporation | Mark Garza    | 1,3,4      |              | FE Voter                  | Julie Severino    | FirstEnergy - FirstEnergy Corporation | 1                       | RF                  |
|                                       |               |            |              |                           | Aaron Ghodooshim  | FirstEnergy - FirstEnergy Corporation | 3                       | RF                  |

| Organization Name                                  | Name          | Segment(s) | Region | Group Name       | Group Member Name | Group Member Organization                          | Group Member Segment(s) | Group Member Region |
|--|---------------|------------|--------|------------------|-------------------|--|-------------------------|---------------------|
|  |               |            |        |                  | Robert Loy        | FirstEnergy - FirstEnergy Solutions                | 5                       | RF                  |
|  |               |            |        |                  | Ann Carey         | FirstEnergy - FirstEnergy Solutions                | 6                       | RF                  |
|  |               |            |        |                  | Mark Garza        | FirstEnergy-FirstEnergy                            | 4                       | RF                  |
| Southern Company - Southern Company Services, Inc. | Pamela Hunter | 1,3,5,6    | SERC   | Southern Company | Adrienne Collins  | Southern Company - Southern Company Services, Inc. | 1                       | SERC                |
|  |               |            |        |                  | Joel Dembowski    | Southern Company - Alabama Power Company           | 3                       | SERC                |
|  |               |            |        |                  | William D. Shultz | Southern Company Generation                        | 5                       | SERC                |
|  |               |            |        |                  | Ron Carlsen       | Southern Company - Southern                        | 6                       | SERC                |

| Organization Name                    | Name      | Segment(s)           | Region | Group Name   | Group Member Name | Group Member Organization            | Group Member Segment(s) | Group Member Region |
|--------------------------------------|-----------|----------------------|--------|--------------|-------------------|--------------------------------------|-------------------------|---------------------|
|                                      |           |                      |        |              |                   | Company Generation                   |                         |                     |
| Northeast Power Coordinating Council | Ruida Shu | 1,2,3,4,5,6,7,8,9,10 | NPCC   | RSC no NGrid | Guy V. Zito       | Northeast Power Coordinating Council | 10                      | NPCC                |
|                                      |           |                      |        |              | Randy MacDonald   | New Brunswick Power                  | 2                       | NPCC                |
|                                      |           |                      |        |              | Glen Smith        | Entergy Services                     | 4                       | NPCC                |
|                                      |           |                      |        |              | Brian Robinson    | Utility Services                     | 5                       | NPCC                |
|                                      |           |                      |        |              | Alan Adamson      | New York State Reliability Council   | 7                       | NPCC                |
|                                      |           |                      |        |              | David Burke       | Orange & Rockland Utilities          | 3                       | NPCC                |
|                                      |           |                      |        |              | Michele Tondalo   | UI                                   | 1                       | NPCC                |
|                                      |           |                      |        |              | Helen Lainis      | IESO                                 | 2                       | NPCC                |
|                                      |           |                      |        |              | Sean Cavote       | PSEG                                 | 4                       | NPCC                |

| Organization Name | Name | Segment(s) | Region | Group Name | Group Member Name | Group Member Organization                             | Group Member Segment(s) | Group Member Region |
|-------------------|------|------------|--------|------------|-------------------|---|-------------------------|---------------------|
|                   |      |            |        |            | Kathleen Goodman  | ISO-NE  | 2                       | NPCC                |
|                   |      |            |        |            | David Kiguel      | Independent   | NA - Not Applicable     | NPCC                |
|                   |      |            |        |            | Silvia Mitchell   | NextEra Energy - Florida Power and Light Co.          | 6                       | NPCC                |
|                   |      |            |        |            | Paul Malozewski   | Hydro One Networks, Inc.                              | 3                       | NPCC                |
|                   |      |            |        |            | Nick Kowalczyk    | Orange and Rockland                                   | 1                       | NPCC                |
|                   |      |            |        |            | Joel Charlebois   | AESI - Acumen Engineered Solutions International Inc. | 5                       | NPCC                |
|                   |      |            |        |            | Mike Cooke        | Ontario Power Generation, Inc.                        | 4                       | NPCC                |

| Organization Name | Name | Segment(s) | Region | Group Name | Group Member Name  | Group Member Organization                    | Group Member Segment(s) | Group Member Region |
|-------------------|------|------------|--------|------------|--------------------|--|-------------------------|---------------------|
|                   |      |            |        |            | Salvatore Spagnolo | New York Power Authority                     | 1                       | NPCC                |
|                   |      |            |        |            | Shivaz Chopra      | New York Power Authority                     | 5                       | NPCC                |
|                   |      |            |        |            | Mike Forte         | Con Ed - Consolidated Edison                 | 4                       | NPCC                |
|                   |      |            |        |            | Dermot Smyth       | Con Ed - Consolidated Edison Co. of New York | 1                       | NPCC                |
|                   |      |            |        |            | Peter Yost         | Con Ed - Consolidated Edison Co. of New York | 3                       | NPCC                |
|                   |      |            |        |            | Ashmeet Kaur       | Con Ed - Consolidated Edison                 | 5                       | NPCC                |
|                   |      |            |        |            | Caroline Dupuis    | Hydro Quebec                                 | 1                       | NPCC                |
|                   |      |            |        |            | Chantal Mazza      | Hydro Quebec                                 | 2                       | NPCC                |

| Organization Name | Name | Segment(s) | Region | Group Name | Group Member Name | Group Member Organization            | Group Member Segment(s) | Group Member Region |
|-------------------|------|------------|--------|------------|-------------------|--------------------------------------|-------------------------|---------------------|
|                   |      |            |        |            | Sean Bodkin       | Dominion - Dominion Resources, Inc.  | 6                       | NPCC                |
|                   |      |            |        |            | Laura McLeod      | NB Power Corporation                 | 5                       | NPCC                |
|                   |      |            |        |            | Randy MacDonald   | NB Power Corporation                 | 2                       | NPCC                |
|                   |      |            |        |            | Gregory Campoli   | New York Independent System Operator | 2                       | NPCC                |
|                   |      |            |        |            | Quintin Lee       | Eversource Energy                    | 1                       | NPCC                |

|   |    |
|---|----|
| <b>1. Do you agree with the proposed scope as described in the SAR? If you do not agree, or if you agree but have comments or suggestions for the project scope please provide your recommendation and explanation.</b>   |    |
| Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6   |    |
| Answer  | No |
| Document Name   |    |
| <b>Comment</b>  |    |
| This standard may be necessary for specific generation types in climates where sudden severe winter weather may be a threat, but for many generators in northern climates this standard will be a burden. NERC has put out guidance on winter weather preparedness, and this should be sufficient.  |    |
| Likes 0   |    |
| Dislikes 0  |    |
| <b>Response: Thank you for your comment. In addition, the SAR DT revised the SAR to provide flexibility among the geographical regions. Regarding the winter weather preparedness guidance, it is understood that cold weather-related guidelines, checklists, surveys, testing, etc., have been established by Regional Reliability Organizations; but the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS although plant winterization plans have already been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions. The SAR DT will notate your suggestion for the SDT to consider as they draft proposed revisions.</b> |    |
| Thomas Foltz - AEP - 3,5  |    |
| Answer  | No |
| Document Name   |    |
| <b>Comment</b>  |    |

AEP takes cold weather preparedness very seriously, and has developed and implemented procedures to ensure unit reliability for cold weather. In addition, NERC’s own Reliability Guideline “Generating Unit Winter Weather Readiness”, has been in effect for some time now. In its own words, this document provides a “framework for developing an effective winter weather readiness program for generating units throughout North America” and guidance “on maintaining individual unit reliability and preventing future cold weather related events.” We believe entities need the flexibility of engineering judgement to design and implement their own procedures to prepare for cold weather outside of prescriptive obligations. Original unit types, design, age, and geographic locations all drive what unique preparatory steps should be taken, making prescriptive obligations undesirable and perhaps even inappropriate. As generation types continue to evolve, winter weather preparation is taken into account more than ever before.

In addition, it should be noted that RTOs often provide their own guidance such as PJM’s as found in [PJM Manual 14D](#) attachment N: Cold Weather Preparation Guideline and Checklist. This is one of several guidance documents that is already available and emphasize reviewing lessons learned after each event and implementations of defenses to prevent recurrence. Once this is in place it creates an living effort that focuses improvements in areas of specific need that directly translates to continual improvement of the process that is in place. ERCOT already has a suitable mechanism in place, which has proven itself in practice. In addition, we are now seeing that REs are heading in a similar direction as well.

In addition, EOP-011 already addresses weather preparedness in an appropriate manner. Functional Entities, such as the TOP and BA, have checklists and attestations required for Generator weatherization. Improvements to weather preparedness have been significantly improved since 2011, with increased awareness and action plans driven by NERC recommendations.

In summary, NERC guidelines, RTO guidance and checklists, and existing NERC requirements, all collectively provide an effective framework for cold weather preparedness.

|          |   |
|----------|---|
| Likes    | 0 |
| Dislikes | 0 |

**Response: Thank you for your comment. The SAR DT will notate your suggestion for the SDT to consider as they draft proposed revisions. In addition, the SAR DT revised the SAR to provide flexibility among the geographical regions. The SAR DT reviewed other standards and deemed additional modifications may be required based on the 2019 FERC and NERC Staff Report: *The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018.***

Regarding the winter weather preparedness guidance, it is understood that cold weather-related guidelines, checklists, surveys, testing, etc., have been established by Regional Reliability Organizations; but the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS although plant winterization plans have already been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions. Since the NERC Winter Guidelines, which posted in 2013, other cold weather related outages have happened. This has led to the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018.

The SAR DT will notate your suggestion for the SDT to consider as they draft proposed revisions.

Jim Nail - City of Independence, Power and Light Department - 1,3,5

Answer

No

Document Name

Comment

Requirements already exist to inform others concerning the status of Facilities. RC/BA/TOP have the authority to include any status/data they deem necessary in their Facility Data requests. Whether a GO/GOP maintains their Facilities ready for dispatch is properly a Market function rather than a Reliability function. Declaring a Facility as available and then failing to bring it on line could be dealt with using Market penalties rather than imposing a new continent wide Standard. For many entities, the documentation of cold weather preparations and maintenance would be an additional administrative burden without an appreciable increase in Reliability.

Likes 0

Dislikes 0

**Response: Thank you for your comment. Although economics and reliability go hand in hand, the focus of the SAR is reliability issues related to cold weather preparedness. Market issues are beyond the authority of the SAR drafting team. The SAR DT reviewed other**

**standards and deemed additional modifications may be required based on the 2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018.**

**Richard Jackson - U.S. Bureau of Reclamation - 1,5**

**Answer** No

**Document Name**

**Comment**

The information in the SAR does not suggest any exemptions or qualifiers are being considered. Reclamation recommends limiting the applicability of a future NERC standard on cold weather preparedness to entities located in geographic areas that don't normally see harsh winter conditions and excluding hydro generators from applicability. As the SAR is presently written, the future standard will result in an administrative burden that offers no increase in reliability for facilities that normally operate in a cold winter environment.

Reclamation agrees with the proposal for Generator Owners and Generator Operators to develop winterization plans and procedures. The SAR appears to propose winterization preparedness requirements that are not prescriptive, which will allow facilities that need certain cold weather preparedness methods to implement those methods while allowing other facilities to implement different appropriate methods. If the proposed standard does not include the above exemptions, it is important to allow different entities with different equipment to develop winterization procedures that are appropriate for their needs.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR drafting team revised the SAR to provide flexibility among the geographical regions. The SAR DT will notate your suggestion for the SDT to consider as they draft proposed revisions.**

**Jeff Kimbell - Public Utility District No. 1 of Chelan County - 1,3,5,6, Group Name CHPD**

**Answer** No

**Document Name**

## Comment

The SPP SAR addresses issues experienced in the Southern portion of the Mid-Continent Regional Transmission Organization. The SAR therefore seeks to address a regional event on national basis, with implications for all of North America.

Many generators operate in areas of regular cold weather and have operated reliably for many years, based on their design for this environment, as well as existing operations planning and procedures. Events in the The South Central United States Cold Weather Bulk Electronic System Event of January 17, 2018 report show the potential unpreparedness of some utilities that do not operate in this environment. While the SAR addresses those that may not be prepared for winter weather, this is not the case for most utilities in North America. Any standard should focus on those not in cold climates, or limit any additional compliance obligations to those who do operate in cold weather to a simple response of preparedness rather than multiple documentation and training requirements specific to cold weather. Our maintenance and operating procedures, practices and the design of our plants are for reliable operation in cold environments. Practices to operate in cold conditions are embedded in existing documentation, rather than specific procedures or documents that would meet this very specific, prescriptive list. Our designs are for cold environments. Many of the problems identified in the report will not happen at northern facilities because the systems are designed around them.

Additionally, multiple past cold weather Events have included natural gas supply availability as an issue. This is not applicable to large hydro plants on a major river such as the Columbia.

The list of requirements to be included in the standard provide little to no additional value to those GOPs that operate in cold weather areas and would create a significant regulatory burden. A more appropriate solution would be to limit the applicability of the standard to specific geographic regions where cold weather is an anomaly and not include regions where this weather is in the normal and planned operating range.

Specific comments for the list contained in the SAR are provided below.

1. *Generator Owner/Generator Operator develops winterization plans, procedures, and winter-specific and plant-specific operator awareness training. Additional elements to consider may include:* These are unnecessary for GO and GOP that operate in regularly cold regions and simply create additional evidence burdens.
  - a. *Generating unit availability;* Normally reported, and not a significant cold weather dependent issue with hydro generation on a major river, such as the Columbia.

b. *Parameters around operating temperatures;* Parameters don't change, as we are designed and operate for cold weather as a matter of course.

c. *Implementing freeze protection measures and technologies;* These are in place in cold regions, but not specifically identified. Identification and implementation would be an additional burden.

d. *Performing periodic adequate maintenance and inspection of freeze protection measures and technologies;* This is part of normal processes and maintenance: What is adequate for a plant that operates in a cold region is minimal and in place, or it would routinely not be operable. Evidence documentation would be an unnecessary burden with no improvement to reliability.

e. *Ensuring gas-fueled generating units' Reliability Coordinator and Balancing Authority are provided notification of firm transportation capacity for natural gas supply.* Our generation is 100% hydro and this is not applicable.

2. *Generator Owner/Generator Operator communicates with the Balancing Authorities and Reliability Coordinators associated parameters for generating unit availability for extreme cold weather performance.* The capacity of our generation type (hydro) does not change based on cold weather conditions, unlike other generation types such as gas and wind that have been affected by cold weather.
3. *Generator Owners/Generator Operator communicates with the Balancing Authorities and Reliability Coordinators when expected temperatures are forecasted within the determined generating unit availabilities, expected availability of the generating units for the appropriate next day operating horizon.* This is unnecessary, as availability is already reported to the BA. Cold weather does not change that for those who operate in cold climates.
4. *Balancing Authority use of the information provided by the Generator Owner/Generator Operator to perform Operational Planning Analysis, and determine the expected availability and contingency reserves for the appropriate next day operating horizon.* This is already performed as a matter of course for our system and would not benefit from additional mandatory requirements.

|          |   |
|----------|---|
| Likes    | 0 |
| Dislikes | 0 |

**Response: Thank you for your comments. Although it is understood that plant winterization plans have been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions, the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS. The SAR drafting team revised the SAR to provide flexibility among the geographical regions. The SAR DT will notate your suggestion for the SDT to consider as they draft proposed revisions.**

**John Allen - City Utilities of Springfield, Missouri - 1,3,4**

|  |    |
|--|----|
| <b>Answer</b>  | No |
| <b>Document Name</b>   |    |
| <b>Comment</b>   |    |
| <p>City Utilities is not opposed to creating a new Reliability Standard or modifying an existing one to ensure resource availability or capability for the BES if necessary. However, we believe the scope of the SAR is too narrow and shortsighted. The rapid transformation of the grid due to growing political and economic pressures is leading to more resource shortages during various ambient conditions, not just extreme cold. Therefore, the scope of the project should evaluate the larger issue and ensure existing Standards adequately protect the BES under all ambient conditions, not just extreme cold. If the industry develops a Standard to only address the cold weather issue, then it will miss an opportunity to address the broader emerging risk of grid transformation as identified in the draft 2019 ERO Reliability Risk Priorities Report.</p> |    |
| Likes  | 0  |
| Dislikes   | 0  |

**Response: Thank you for your comment. The SAR drafting team chose to keep the primary focus of the SAR on cold weather preparedness, which is consistent with the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018 Recommendation One. In response to a NERC Staff recommendation, the SAR DT modified the SAR to include communication of operating limitations due to all ambient weather conditions. The basis for NERC Staff's recommendation is that communication is important for reliability as it allows RCs and BAs to be better prepared for next day studies and even hour ahead studies. It is important that entities know that a unit can be counted on based on the data provided. NERC Staff**

recommended including the issue in this project, rather than addressing in a subsequent project, in the interest of administrative efficiency and to avoid the burdens that could come from having multiple successive versions of a standard become effective in a short time.

**Marty Hostler - Northern California Power Agency - 5,6**

**Answer** No

**Document Name**

**Comment**

No. I don't feel this is a reliability issue. This is Market issue. If a Generator cannot start up and has been selected by BA to run; then there are financial penalties to encourage keeping the unit available to run when called on.

Likes 0

Dislikes 0

**Response: Thank you for your comment. Although economics and reliability go hand in hand, the focus of the SAR is a reliability issues related to cold weather preparedness. Market issues are beyond the authority of the SAR drafting team. The SAR DT reviewed other standards and deemed additional modifications are required based on the *2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018*.**

**Michael Brytowski - Great River Energy - 1,3,5,6 - MRO**

**Answer** No

**Document Name**

**Comment**

GRE recommends that no new Standard be developed at this time, as the issue seems to affect southern U.S. entities and is not a continent-wide issue. GRE also recommends more technical information be posted on this topic before deciding on a course of action to

take. For example, NERC should develop a white paper that clearly defines the true issues that need correction by the GOs/GOPs that have problems operating during extreme cold weather events.

While GRE is opposed to creating a new Reliability Standard; we would be willing to consider modification of existing standards to ensure resource availability or capability for the BES, if necessary. However, GRE believes the scope of the SAR is too narrowly drawn and shortsighted. The rapid transformation of the grid due to growing political and economic pressures is leading to more resource shortages during diverse ambient conditions, not just extreme cold. Therefore, the scope of the project should evaluate the larger issue and ensure existing Reliability Standards adequately protect the BES under all ambient conditions, not just extreme cold. If the industry develops a new Reliability Standard that only addresses the extreme cold weather issue, then it will miss an opportunity to address the broader emerging risk of grid transformation as identified in the draft 2019 ERO Reliability Risk Priorities Report.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR DT encourages you to review the *2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018*.**

**The SAR drafting team chose to keep the SAR focus to cold weather preparedness, which is consistent with the *2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018* Recommendation one.**

**The SAR drafting team chose to keep the primary focus of the SAR on cold weather preparedness, which is consistent with the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018 Recommendation One. In response to a NERC Staff recommendation, the SAR DT modified the SAR to include communication of operating limitations due to all ambient weather conditions. The basis for NERC Staff's recommendation is that communication is important for reliability as it allows RCs and BAs to be better prepared for next day studies and even hour ahead studies. It is important that entities know that a unit can be counted on based on the data provided. NERC Staff recommended including the issue in this project, rather than addressing in a subsequent project, in the interest of administrative efficiency and to avoid the burdens that could come from having multiple successive versions of a standard become effective in a short time.**

**Jerry Horner - Basin Electric Power Cooperative - 1,3,5,6**

**Answer**

No

**Document Name**

**Comment**

Basin supports comments generated by MRO NSRF, as follows:

The NSRF recommends that no new Standard be developed at this time, as the issue seems to affect southern U.S. entities and is not a continent-wide issue. The NSRF also recommends more technical information be posted on this topic before deciding on a course of action to take. For example, NERC should develop a white paper that clearly defines the true issues that need correction by the GOs/GOPs that have problems operating during extreme cold weather events.

The NSRF is opposed to creating a new Reliability Standard; however, the group would be willing to consider modification of existing standards to ensure resource availability or capability for the BES, if necessary. However, the NSRF believes the scope of the SAR is too narrowly drawn and shortsighted. The rapid transformation of the grid due to growing political and economic pressures is leading to more resource shortages during diverse ambient conditions, not just extreme cold. Therefore, the scope of the project should evaluate the larger issue and ensure existing Reliability Standards adequately protect the BES under all ambient conditions, not just extreme cold. If the industry develops a new Reliability Standard that only addresses the extreme cold weather issue, then it will miss an opportunity to address the broader emerging risk of grid transformation as identified in the [draft 2019 ERO Reliability Risk Priorities Report](#).

1. Provide any additional comments for the SAR drafting team to consider, if desired.

Comments: If FERC and NERC expect to have no adverse effects on the BES in the real-time operations horizon during extreme ambient conditions, then the same expectation should be placed on the planning horizons. There are numerous Reliability Standards already in place that should be assessing resource capability and availability for these extreme conditions to identify and mitigate shortages ahead of real-time. For example:

- FAC-008 and MOD-025 should ensure the GO and GOP know the capability and availability of their BES resources under diverse ambient conditions, including extreme cold weather. If they don't have this information or are providing false information, then that should be in scope today for the ERO.

- MOD-031 and MOD-032 should ensure the PC and BA request and receive information from each RP to know the capability and availability of BES resources within their area under diverse ambient conditions, including extreme cold weather. If they don't have this information or are provided false information, then that should be in scope today for the ERO.
- NERC Reliability Assessments and TPL-001 should ensure near-term/long-term planning studies only include BES resources that are known to have the capability and availability under the specified ambient conditions, including extreme cold weather/winter peak. If they are not studying these conditions or are including invalid resources, then that should be in scope today for the ERO.
- IRO-010 and TOP-003 should ensure the RC and BA request and receive information from each GO and GOP to know the capability and availability of BES resources in their area under diverse ambient conditions, including extreme cold weather. If they don't have this information or are provided false information, then that should be in scope today for the ERO.
- IRO-008, TOP-001 and TOP-002 should ensure the RC's and BA's Operational Planning Analysis and the RC's Real-time Assessment only includes BES resources that are known to have the capability and availability under the expected ambient conditions, including extreme cold weather/winter peak. If they are not assessing these conditions or are including invalid resources and/or Operating Plans, then that should be in scope today for the ERO.

If the ERO enforces these expectations, then it should either incent the GO/GOP to invest in improvements to be eligible for resource planning and BA/market dispatch (revenue) or the entities planning and operating the BES should have to acquire and dispatch other resources to maintain reliability and prevent recurrence of an event like January 17, 2018. This approach should also work in protecting the BES against other factors that impact resource capability and availability, which are becoming too frequent.

The drafting team should also be mindful of the practicality in creating more Reliability Standards that apply to nearly 1000 entities registered as a GO/GOP whose primary business is to sell power to the grid. With the proliferation of renewable resources, many of those GO/GOP entities are "non-utility" companies who are operating in RTO markets solely for revenue. The SAR proposal will most likely be very controversial with these entities and take years to develop and implement. Additionally, to secure industry approval, the result could be a Reliability Standard with weak requirements that does little to address the issue; and creates more administrative work for the registered entities (especially those who already routinely operate in cold weather conditions) with uncertain value. The ERO will also have to initiate monitoring of all 1000 of these entities, which may be inefficient and impractical.

A more effective and efficient method would be to ensure requirements for the PC, RC and BA (whose role and responsibility is to oversee resource adequacy within an area of the BES) are sufficient to address the emerging risk of grid transformation. This proactive approach would reduce the need to create projects continually to address the next event based on other factors.

Many northern GOs/GOPs do not have issues during extreme weather events (both hot and cold), and did not have an issue during the extreme cold weather event of January 17, 2018. A Standard developed for a GO/GOP to assure that a unit will always start is unrealistic and unsustainable. A generator owner could invest a large sum of money into winterizing their generator and it still may not start and perform as designed. The SAR should clearly address the communication of when a generator cannot perform as requested (to start, to ramp, etc.). This communication could include (but not limited to):

- De-rates of output due to snow/dust/ cloud cover/sun set times etc. to PV systems;
- Icing of turbine blades/over speed due to excess wind/cut out due to extreme cold for wind Facilities;
- Frozen and wet coal piles/hot-cold ambient temps that impact Mw outputs/etc. for fossil fuel plants; and
- Lack of water due to frozen water/EPA restrictions/etc. for hydro plants.

As you can see, every type of generator has some type of natural and outside rules that can limit its output. This SAR should address the communication of such information and not just training or installing freeze protection measures.

Finally, this SAR seems to propose Resource Adequacy as a requirement, which does not need to be part of a Reliability Standard focused on reliability during ambient conditions. In other words, a GO/GOP should perform its obligations pursuant to contract or market rules without the influence of a Reliability Standard, and a Reliability Standard should not dictate that a generator must perform in a certain way. The maintenance items within the FERC and NERC report should be “common sense” items that a GO/GOP would perform, in order to operate as required. If there are a set of GOs/GOPs who do not perform due to some type of low (i.e., extreme cold weather) temperature parameters, then there could be a tariff or market process to reduce the credibility of the GO/GOP.

|          |   |
|----------|---|
| Likes    | 0 |
| Dislikes | 0 |

**Response: Thank you for your comment. (1) The SAR drafting team encourages you to review the 2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018. (2) The SAR drafting team determined to keep the SAR focus to cold weather preparedness, which is consistent with the 2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018 Recommendation one. In response to a NERC Staff recommendation, the SAR DT modified the SAR to include communication of operating limitations due to all ambient weather conditions. (3) The SAR drafting team revised the SAR to provide flexibility among the geographical regions. (4) Although plant winterization plans have been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions, the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS. In addition, those standards listed above do not specifically address freezing issues that occur to combustion turbines, boilers and balance of plant equipment. These recommendations will be notated for the SDT when formed. (5) The SAR DT agrees that resource adequacy is not intended to become a requirement and has modified the SAR accordingly.**

**Larry Heckert - Alliant Energy Corporation Services, Inc. - 4**

**Answer**

No

**Document Name**

**Comment**

This issue seems to affect southern U.S. entities and does not appear to be a continent-wide issue. Alliant Energy recommends more technical information be posted on this topic before deciding on a course of action to take such as a white paper that clearly defines the true issues that need correction by the GOs/GOPs during extreme cold weather events.

Rather than a new standard, Alliant Energy would support consideration of a modification of existing standards to ensure resource availability or capability for the BES. However, we believe the scope of the SAR is too narrowly drawn and shortsighted. The rapid transformation of the grid due to growing political and economic pressures is leading to more resource shortages during diverse ambient conditions, not just extreme cold. Therefore, the scope of the project should evaluate the larger issue and ensure existing Reliability Standards adequately protect the BES under all ambient conditions, not just extreme cold. Development of a new Reliability Standard

that only addresses the extreme cold weather issue will miss an opportunity to address the broader emerging risk of grid transformation as identified in the [draft 2019 ERO Reliability Risk Priorities Report](#).

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR DT encourages you to review the *2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018*.**

**The SAR drafting team chose to keep the primary focus of the SAR on cold weather preparedness, which is consistent with the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018 Recommendation One. In response to a NERC Staff recommendation, the SAR DT modified the SAR to include communication of operating limitations due to all ambient weather conditions. The basis for NERC Staff's recommendation is that communication is important for reliability as it allows RCs and BAs to be better prepared for next day studies and even hour ahead studies. It is important that entities know that a unit can be counted on based on the data provided. NERC Staff recommended including the issue in this project, rather than addressing in a subsequent project, in the interest of administrative efficiency and to avoid the burdens that could come from having multiple successive versions of a standard become effective in a short time.**

Daniel Gacek - Exelon - 1,3,5,6

Answer

No

Document Name

Comment

The section labeled "project scope" is acceptable. However the following section "Detailed Description" is both too restrictive and too vague, see additional comments below.

On Behalf of Exelon: Segments 1, 3, 5, 6

Likes 0

Dislikes 0

**Response: Thank you for your comment. Please see the SAR DT responses in Question 2.**

**Joseph DePoorter - MGE Energy - Madison Gas and Electric Co. - 3,4,5,6**

**Answer** No

**Document Name**

**Comment**

MGE recommends that no new Standard be developed at this time as this seems to be a southern US entity issue and not continent-wide issue.

We are opposed to creating a new Reliability Standard but would be willing to modify an existing one to ensure resource availability or capability for the BES, if necessary. However, we believe the scope of the SAR is too narrow and shortsighted. The rapid transformation of the grid due to growing political and economic pressures is leading to more resource shortages during various ambient conditions, not just extreme cold. Therefore, the scope of the project should evaluate the larger issue and ensure existing Standards adequately protect the BES under all ambient conditions, not just extreme cold. If the industry develops a Standard to only address the cold weather issue, then it will miss an opportunity to address the broader emerging risk of grid transformation as identified in the [draft 2019 ERO Reliability Risk Priorities Report](#).

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR DT encourages you to review the 2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018.**

The SAR drafting team chose to keep the primary focus of the SAR on cold weather preparedness, which is consistent with the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018 Recommendation One. In response to a NERC Staff recommendation, the SAR DT modified the SAR to include communication of operating limitations due to all ambient weather conditions. The basis for NERC Staff's recommendation is that communication is important for reliability as it allows RCs and BAs to be better prepared for next day studies and even hour ahead studies. It is important that entities know that a unit can be counted on based on the data provided. NERC Staff recommended including the issue in this project, rather than addressing in a subsequent project, in the interest of administrative efficiency and to avoid the burdens that could come from having multiple successive versions of a standard become effective in a short time.

**Theresa Allard - Minnkota Power Cooperative Inc. - 1**

**Answer** No

**Document Name**

**Comment**

Minnkota believes that no new Standard needs to be developed at this time, as the issue seems to affect southern U.S. entities and is not a continent-wide issue. Minnkota also requests more technical information be posted on this topic before deciding on a course of action to take. For example, NERC should develop a white paper that clearly defines the specific issues that need correction by the GOs/GOPs that have problems operating during extreme cold weather events, including metrics based on geographic location and generator type.

Minnkota is opposed to creating a new Reliability Standard; however, Minnkota would be willing to consider modification of existing standards to ensure resource availability or capability for the BES, if necessary.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR DT encourages you to review the 2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018.**

|  |    |
|--|----|
| <b>Jamie Monette - Allete - Minnesota Power, Inc. - 1</b>  |    |
| <b>Answer</b>  | No |
| <b>Document Name</b>   |    |
| <b>Comment</b>   |    |
| <p>For Generating Units that are designed for cold weather operation, this would create an unnecessary administrative burden. Minnesota Power supports Edison Electric Institute’s comment, which supports the North American Generator Forum (glossary)’s recommendations:</p> <ul style="list-style-type: none"> <li>• The development of a quantifiable definition for “Extreme Cold Weather”</li> <li>• The addition of language within the SAR that ensure regional differences will be considered when addressing this issue.</li> </ul> |    |
| Likes 0  |    |
| Dislikes 0   |    |
| <p><b>Response: Thank you for your comment. The SAR drafting team discussed at length ‘Extreme Cold Weather’ and how it could be considered a subset of cold weather. The SAR drafting team revised the SAR to provide flexibility among the geographical regions. The SAR DT will notate your suggestions for the SDT to consider as they draft proposed revisions.</b></p>   |    |
| <b>Thomas Breene - WEC Energy Group, Inc. - 3,4,5,6</b>  |    |
| <b>Answer</b>  | No |
| <b>Document Name</b>   |    |
| <b>Comment</b>   |    |
| <p>WEC Energy Group does nor agree with this SAR.</p>  |    |

The GO/GOP topics covered in 1. a, b, c and d of this SAR are already included in existing reliability guidelines. The SAR materials and links refer to issues in climates typically not exposed to cold weather patterns. The need to focus on winterization procedures and freeze protection in these regions should be emphasized.

The SAR attempts to bring the market function into the reliability function during cold weather and this should not be supported with a standard.

Likes 0

Dislikes 0

**Response: Thank you for your comment. Although economics and reliability go hand in hand, the focus of the SAR is reliability issues related to cold weather preparedness. Market issues are beyond the authority of the SAR drafting team. The SAR DT reviewed other standards and deemed additional modifications may be required based on the FERC/NERC Report.**

**The SAR drafting team chose to keep the primary focus of the SAR on cold weather preparedness, which is consistent with the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018 Recommendation One. In response to a NERC Staff recommendation, the SAR DT modified the SAR to include communication of operating limitations due to all ambient weather conditions. The basis for NERC Staff's recommendation is that communication is important for reliability as it allows RCs and BAs to be better prepared for next day studies and even hour ahead studies. It is important that entities know that a unit can be counted on based on the data provided. NERC Staff recommended including the issue in this project, rather than addressing in a subsequent project, in the interest of administrative efficiency and to avoid the burdens that could come from having multiple successive versions of a standard become effective in a short time.**

Wayne Sipperly - North American Generator Forum - 1,2,3,6 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer

No

Document Name

Comment

The North America Generator Forum (NAGF) does not agree with the proposed scope of the SAR for Cold Weather Preparation as submitted by SPP. Generators as a whole take weather preparation, whether winter or summer, and reliability, very seriously. Under normal winter weather conditions, generators do not experience operating issues on a consistent basis. However, under extreme conditions, all BES elements, not just those associated with generation, could experience unpredictable operational issues. The NAGF believes that the proposed SAR does not address the core issue(s) and will create more administrative work and financial expense for GO/GOP registered entities with no reliability benefit. The NAGF supports ensuring that existing requirements for the PC, RC, and BA address communication of generator operational information, including when they cannot perform as requested, during all types of extreme weather events.

The NAGF membership believes the deliverables of the SAR are presently met through existing Tariffs, Operating Agreements, Interconnection Agreements, ISO market rules, BA Surveys, and other Standards such as TOP-003. Under the requirements of TOP-003-3, the TOP and BA must maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses. The GO / GOP must satisfy the obligations of documented specifications to assist in Real-time monitoring and assessments. If the TOP and BA do not have the information needed to perform Planning Analyses for cold weather events, the data should be requested as part of TOP-003-3. There may be an opportunity to further refine the required data by revising TOP-003-3.

Although not representative of all NERC registered generators, many of the NAGF membership companies already have Cold Weather Preparation procedures in place and have invested in winterizing their facilities. They utilize and reference NERC's Reliability Guideline "Generating Unit Winter Weather Readiness" and ISO market rules, and believe that flexibility is needed based on design, geography and market requirements in order to determine appropriate weather preparation. Continent wide, prescriptive requirements are not appropriate because of the differences in technology and typical winter conditions across the ERO.

Organized markets provide financial incentives for GO/GOPs to invest in winterization improvements. However, such investments do not guarantee that a generation unit will start when required or will not be derated during an extreme cold weather event. Extreme cold weather-related outages typically involve previously unknown vulnerabilities, especially when plants experience unprecedented combinations of temperature, wind speed and precipitation. Transmission systems suffer unpredictable failures under such circumstances, and the same applies for generation plants.

Therefore, the focus of this SAR should be to:

- Enhance communication of generator operational capabilities for the planning and real-time time horizon so that the RC, BA, and TOPs can more accurately forecast BES generator capability and availability during extreme weather events.
- Support incentives for GO/GOPs to continually improve generation facilities for all types of extreme weather events.
- Support incentives for putting additional generation plants online in advance of extreme weather events (keeping units running is far more secure than starting-up in the middle of a major winter storm).

Likes 0

Dislikes 0

**Response: Thank you for your comment. The standard referenced in your comment does not specifically address freezing issues that occur to combustion turbines, boilers and balance of plant equipment. Plant winterization plans have already been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions, but the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS. Although it is understood that market operations incent generator availability and lack of/poor performance can result in monetary penalties, plant freezing issues continue to occur when precautions have not been taken to prevent freezing during these conditions. The SAR DT will notate the standards referenced in your comment for SDT consideration when developing modifications to the appropriate standards, if warranted.**

**The SAR drafting team chose to keep the primary focus of the SAR on cold weather preparedness, which is consistent with the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018 Recommendation One. In response to a NERC Staff recommendation, the SAR DT modified the SAR to include communication of operating limitations due to all ambient weather conditions. The basis for NERC Staff's recommendation is that communication is important for reliability as it allows RCs and BAs to be better prepared for next day studies and even hour ahead studies. It is important that entities know that a unit can be counted on based on the data provided. NERC Staff recommended including the issue in this project, rather than addressing in a subsequent project, in the interest of administrative efficiency and to avoid the burdens that could come from having multiple successive versions of a standard become effective in a short time.**

**Maryanne Darling-Reich - Black Hills Corporation - 1,3,5,6 - MRO,WECC**

|   |    |
|---|----|
| Answer  | No |
| Document Name   |    |
| <b>Comment</b>  |    |
| <p>Black Hills Corporation (BHC) agrees with most of the SAR, but does not agree with the proposed scope for “Operator Awareness Training”. Due to the fact that our Generation Resources/Facilities are all located in the central to Northern area of North America, our generation facilities are designed already for “cold weather” and as such, our generation facilities already have in place plans/procedures and as part of these annual reviews, each facility reviews prior items from past year(s) and proceed accordingly for their annual winter preparations. Our Generators Plant Operators already have an awareness of cold weather, including extreme cold, &amp; its potential impacts to our facilities and the reliability of the BES, that another mandatory training placed upon them if not a productive or cost effective use of their time.</p> |    |
| Likes 0   |    |
| Dislikes 0  |    |
| <p><b>Response:</b> Thank you for your comment. Plant winterization plans have already been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions, but the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS. Formal and regular winter readiness/operator awareness training typically does not exist or is rarely practiced. In addition, the SAR DT encourages you to review page 86 of the <i>2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018</i> report. This confirms that training is part of recommendation 1.</p>  |    |
| Dennis Sismaet - Northern California Power Agency - 5,6   |    |
| Answer  | No |
| Document Name   |    |
| <b>Comment</b>  |    |

I don't feel this is a reliability issue. This is Market issue. If a Generator cannot start up and has been selected by BA to run; then there are financial penalties to encourage keeping the unit available to run when called on.

Likes 0

Dislikes 0

**Response: Thank you for your comment. Although it is understood that market operations incent generator availability and lack of/poor performance can result in monetary penalties, plant freezing issues continue to occur when precautions have not been taken to prevent freezing during cold weather conditions.**

sean erickson - Western Area Power Administration - 1,6

Answer

No

Document Name

Comment

WAPA recommends that no new Standard be developed at this time, as the issue seems to affect southern U.S. entities and is not a continent-wide issue. WAPA also recommends more technical information be posted on this topic before deciding on a course of action to take. For example, NERC should develop a white paper that clearly defines the true issues that need correction by the GOs/GOPs that have problems operating during extreme cold weather events.

WAPA is opposed to creating a new Reliability Standard; however, the group would be willing to consider modification of existing standards to ensure resource availability or capability for the BES, if necessary. However, WAPA believes the scope of the SAR is too narrowly drawn and shortsighted. The rapid transformation of the grid due to growing political and economic pressures is leading to more resource shortages during diverse ambient conditions, not just extreme cold. Therefore, the scope of the project should evaluate the larger issue and ensure existing Reliability Standards adequately protect the BES under all ambient conditions, not just extreme cold. If the industry develops a new Reliability Standard that only addresses the extreme cold weather issue, then it will miss an opportunity to address the broader emerging risk of grid transformation as identified in the [draft 2019 ERO Reliability Risk Priorities Report](#).

|  |    |
|--|----|
| Likes  | 0  |
| Dislikes   | 0  |
| <p><b>Response:</b> Thank you for your comment. The SAR DT encourages you to review the <i>2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018</i>.</p> <p>The SAR drafting team chose to keep the primary focus of the SAR on cold weather preparedness, which is consistent with the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018 Recommendation One. In response to a NERC Staff recommendation, the SAR DT modified the SAR to include communication of operating limitations due to all ambient weather conditions. The basis for NERC Staff's recommendation is that communication is important for reliability as it allows RCs and BAs to be better prepared for next day studies and even hour ahead studies. It is important that entities know that a unit can be counted on based on the data provided. NERC Staff recommended including the issue in this project, rather than addressing in a subsequent project, in the interest of administrative efficiency and to avoid the burdens that could come from having multiple successive versions of a standard become effective in a short time.</p> <p>The SAR drafting team revised the SAR to provide flexibility among the geographical regions. The SAR DT will notate your suggestion for the SDT to consider as they draft proposed revisions.</p> |    |
| <p><b>David Jendras - Ameren - Ameren Services - 1,3,6</b></p>   |    |
| Answer   | No |
| Document Name  |    |
| <p><b>Comment</b></p> <p>Ameren does not support the proposed SAR for Cold Weather Preparation as submitted by SPP. The Midcontinent Independent System Operator (MISO) and the other ISOs serve as Balancing Authorities (BA) and Reliability Coordinators (RC) and have been leading several initiatives to address cold weather preparation. To avoid the duplication of efforts, Ameren would like to push for more of a regional approach, and allow the ISOs to continue leading extreme weather preparations.</p>   |    |

The vast majority of generation outages and derates caused by cold weather happened in the southern region, where cold weather susceptible components are not adequately protected. As a matter of normal reliable operating procedure, generators in the mid and northern regions fully enclose their critical components and utilize heat tracing technologies.

Another issue was having precautions for wind barriers, measures Ameren is already doing. MISO has already created cold weather steps for wind in preparation for winter. Ameren would prefer that the RTOs and GO/GOPs work out winterization plans outside the formal standard process.

Likes 0

Dislikes 0

**Response: Thank you for your comment. Since the NERC Winter Guidelines, which posted in 2013, other cold weather related outages have happened. This has led to the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018.**

**The SAR drafting team revised the SAR to provide flexibility among the geographical regions. The SAR DT will notate the standards referenced in your comments for SDT consideration when developing modifications to the appropriate standards, if warranted.**

**Devon Tremont - Taunton Municipal Lighting Plant - 1,3,5 - NPCC**

**Answer**

No

**Document Name**

**Comment**

The Taunton Municipal Lighting Plant believes that the BAs and RCs are well-equipped to address winter preparedness on their own without the need to create a mandatory Reliability Standard. BAs and RCs in North America that regularly experience cold weather are well aware of the concerns and limitations of their GOPs, and part of this comes from the BAs and RCs creating their own operating procedures that require some level of winterization/winter preparedness. By creating a mandatory Reliability Standard for this scope,

NERC will be placing additional burden on the GOPs who already have extensive reporting requirements, and the fear is that this requirement would only add an additional, cumbersome compliance task to GOPs without a significant increase in reliability.

Likes 0

Dislikes 0

**Response: Thank you for your comment. It is understood that cold weather-related guidelines, checklists, surveys, testing, etc., have been established by Regional Reliability Organizations; but the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS although plant winterization plans have already been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions. Since the NERC Winter Guidelines, which posted in 2013, other cold weather related outages have happened. This has led to the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018. The SAR addresses recommendation 1 and may be developed at the same time RTO/ISOs are addressing other recommendations that deal with regional mitigation.**

**The SAR drafting team revised the SAR to provide flexibility among the geographical regions. The SAR DT will notate the standards referenced in your comments for SDT consideration when developing modifications to the appropriate standards, if warranted.**

Tara Lightner - Sunflower Electric Power Corporation - 1 - MRO

Answer No

Document Name

Comment

The NSRF recommends that no new Standard be developed at this time, as the issue seems to affect southern U.S. entities and is not a continent-wide issue. The NSRF also recommends more technical information be posted on this topic before deciding on a course of action to take. For example, NERC should develop a white paper that clearly defines the true issues that need correction by the GOs/GOPs that have problems operating during extreme cold weather events.

The NSRF is opposed to creating a new Reliability Standard; however, the group would be willing to consider modification of existing standards to ensure resource availability or capability for the BES, if necessary. However, the NSRF believes the scope of the SAR is too narrowly drawn and shortsighted. The rapid transformation of the grid due to growing political and economic pressures is leading to more resource shortages during diverse ambient conditions, not just extreme cold. Therefore, the scope of the project should evaluate the larger issue and ensure existing Reliability Standards adequately protect the BES under all ambient conditions, not just extreme cold. If the industry develops a new Reliability Standard that only addresses the extreme cold weather issue, then it will miss an opportunity to address the broader emerging risk of grid transformation as identified in the [draft 2019 ERO Reliability Risk Priorities Report](#).

Likes 0

Dislikes 0

**Response: Thank you for your comment. The standard referenced in your comment does not specifically address freezing issues that occur to combustion turbines, boilers and balance of plant equipment. Plant winterization plans have already been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions, but the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS. Since the NERC Winter Guidelines, which posted in 2013, other cold weather related outages have happened. This has led to the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018.**

**Tony Skourtas - Los Angeles Department of Water and Power - 1,3,5,6**

**Answer**

No

**Document Name**

**Comment**

LDWP does not agree with the scope of this SAR. Extreme cold weather has little to no impact on the reliability of LDWP's generating stations, including the Intermountain Power Plant (IPP) generating station in Utah. Historically, IPP encounters subzero temperatures regularly throughout the winter months, and no reliability issues have been encountered.

The only issue that does occur during these extreme cold weather events is the potential to disrupt IPP’s fuel supply. IPP personnel deal with frozen coal in the coal cars when they arrive on site for unloading. They also manage frozen coal moving up the conveyor belts into the generating unit. Both of these issues could cause a disruption to the generating units. The turbine generator and the transformers historically have not been adversely effected by these cold weather events.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR drafting team revised the SAR to provide flexibility among the geographical regions. The SAR drafting team will notate your comment regarding coal, turbine generations, and transformers to the SDT when formed.**

**Matthew Nutsch - Seattle City Light - 1,3,4,5,6 - WECC**

**Answer**

No

**Document Name**

**Comment**

Entities located in the northern United States experience and prepare for cold weather conditions every year. These entities design their facilities to operate during cold weather (unlike entities in the south, which design facilities to manage heat during the summer). Moreover northern entities already have practices in place to prepare for winter conditions each year, and have had such practices for as much as 100 years. For northern entities, this Standard would appear to add a paperwork burden—formally documenting, tracking, monitoring, and evidencing implementation of policies and procedures that have functioned for decades—that offers no reliability benefit. Indeed the burden to prepare and manage the necessary documentation may even detract from cold weather reliability for northern entities. First because resources will need to be assigned to document compliance, potentially reducing the availability of resources to perform other work (including winterization). And second because to minimize the compliance risk and documentation challenge, northern entities may simplify, standardize, or eliminate some of the proven winterization activities they perform today.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR DT will notate your comment for the SDT to take this into account when the drafting phase begins. Plant winterization plans have already been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions, but the freezing of valves, equipment, piping and instrumentation is still occurring. Also, it was determined during analysis of the 2018 South Central Cold Weather event, that some GO/GOPs still do not have winterization plans as recommended as a result of the 2011 Southwest Cold Weather Event.**

**The SAR drafting team revised the SAR to provide flexibility among the geographical regions.**

**Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy**

**Answer** Yes

**Document Name**

**Comment**

None.

Likes 0

Dislikes 0

**Response: The SAR drafting team thanks you for your support.**

**Anthony Jablonski - ReliabilityFirst - 10**

**Answer** Yes

**Document Name**

**Comment**

ReliabilityFirst provides the following as points to be considered in the Cold Weather SAR.

1. Although the main focus of the Standard is extreme cold weather, this is a perfect opportunity for other extreme weather conditions to be addressed (hot, cold, draught, hurricane, etc.)
2. Addition or modification of Glossary terms may be necessary such as what is considered “extreme cold” or “extreme weather”.
3. Transmission Owners/Operators should be included in applicability to ensure extreme cold weather preparations for switchyards/substations.
4. Purpose should include preparing switchyards/substations for extreme cold weather performance (Ensuring operation of breaker compressors/heaters, weather proofing of breaker cabinets/electrical boxes against water infiltration, preventing icing of Kirk key interlocking system, preventing freezing of disconnect/ground switch operating mechanisms, etc.).

Likes 0

Dislikes 0

**Response: Thank you for your comments. (1) The SAR drafting team chose to keep the primary focus of the SAR on cold weather preparedness, which is consistent with the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018 Recommendation One. In response to a NERC Staff recommendation, the SAR DT modified the SAR to include communication of operating limitations due to all ambient weather conditions. The basis for NERC Staff's recommendation is that communication is important for reliability as it allows RCs and BAs to be better prepared for next day studies and even hour ahead studies. It is important that entities know that a unit can be counted on based on the data provided. NERC Staff recommended including the issue in this project, rather than addressing in a subsequent project, in the interest of administrative efficiency and to avoid the burdens that could come from having multiple successive versions of a standard become effective in a short time. (2) The SAR drafting team removed the word ‘extreme’ from the SAR; therefore, a glossary term may not be needed.**

**Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4, Group Name FE Voter**

Answer

Yes

Document Name

Comment

Nuclear units are subject to annual reviews from their On-Site NRC Inspectors for both winter and summer seasonal readiness per NRC Attachment 71111.01 “Adverse Weather Protection”. A cold-weather standard would represent dual regulation (i.e. both NRC and NERC would be auditing cold weather preparation plans). Consider exempting all units regulated by the NRC from this standard (removed from scope) similar to what is being done for the CIP Standards.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR drafting team revised the SAR to provide flexibility among the geographical regions. The SAR DT will notate your suggestion regarding nuclear units for the SDT to consider as they draft proposed revisions.**

**Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC**

**Answer** Yes

**Document Name**

**Comment**

None

Likes 0

Dislikes 0

**Response: The drafting team appreciates your response and support.**

**Bette White - AES - Indianapolis Power and Light Co. - 3**

**Answer** Yes

**Document Name**

**Comment**

|   |     |
|---|-----|
| IPL agrees with the basic scope of the proposed scope of the Cold Weather SAR.  |     |
| Likes   | 0   |
| Dislikes  | 0   |
| <b>Response: The drafting team appreciates your response and support.</b>   |     |
| <b>Rodney Warner - PNM Resources - Public Service Company of New Mexico - 1 - WECC</b>  |     |
| Answer  | Yes |
| Document Name   |     |
| <b>Comment</b>  |     |
| <p>Concern was expressed by the committee the "Ensuring gas-fueled generating units' Reliability Coordinator and Balancing Authority are provided notification of firm transportation capacity for natural gas supply." This information is publically available. Should not be a requirement for the GO/GOP to report to the RC and BA.</p> <p>Recommend that GO/GOP provide changes to firm gas supply that would effect planned generation to BA and RC as soon as possible. BA and RC will use this information for real time Operational Planning assesments and Real Time Assesments.</p> |     |
| Likes   | 0   |
| Dislikes  | 0   |
| <b>Response: Thank you for your comments. Some Regional Reliability Organizations under their market rules already require that GO/GOPs formally identify and report fuel transportation issues, contract commitments, resource capability, capacity and dual-fuel availability. The SAR has been revised to clarify that communication between functional entities will occur when generating unit availability is expected to be affected by all ambient weather conditions. In addition, references to 'firm gas' have been removed from the SAR.</b>  |     |

|   |     |
|---|-----|
| <b>Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable</b>  |     |
| <b>Answer</b>   | Yes |
| <b>Document Name</b>  |     |
| <b>Comment</b>  |     |
| <p>EEI supports the SAR scope as proposed but suggests consideration be given to the following recommendations made by the NAGF:</p> <ul style="list-style-type: none"> <li>• Flexibility based on design, geography, and other unique characteristics of each generator in order to determine appropriate weather preparations.</li> <li>• Development of a quantifiable definition for “Extreme Cold Weather” that considers regional differences.</li> </ul>           |     |
| Likes   | 0   |
| Dislikes  | 0   |
| <p><b>Response: Thank you for your comment. The SAR drafting team revised the SAR to provide flexibility among the geographical regions. The SAR DT will notate your suggestion for the SDT to consider as they draft proposed revisions. In addition, The SAR drafting team removed the word ‘extreme’ from the SAR since each geographical area may have different interpretations of what they consider extreme; therefore, a glossary term may not be needed.</b></p> |     |
| <b>Bobbi Welch - Midcontinent ISO, Inc. - 2 - MRO,SERC,RF</b>   |     |
| <b>Answer</b>   | Yes |
| <b>Document Name</b>  |     |
| <b>Comment</b>  |     |
| <p>MISO supports the development of a NERC Reliability Standard to ensure preparedness for extreme cold weather conditions and believes that the proposed SAR does a good job capturing the spirit and intent of the findings and recommendations contained in the <i>2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018</i>; In addition, we offer the following items for consideration.</p>  |     |

Currently the SAR is silent regarding accuracy of generating unit performance with respect to ambient temperature. As the FERC and NERC Staff Report mentions “accuracy” several times, how can accuracy be incorporated into the scope of the Standard? MISO recommends the Generator Owner/Generator Operator periodically review generating unit performance and update its plans, procedures and training for operating generating units based on changes (equipment modifications, operating experience, etc.) and share this information with their Balancing Authorities.

In addition to the standards outlined in the SAR (IRO-010-2 and TOP-003-3), MISO recommends EOP-011 be reviewed for impacts as a result of this proposed project. For example, EOP-011 requires some of these aspects already. This standard requires Balancing Authorities to develop, maintain and implement one or more Reliability Coordinator-reviewed Operating Plan(s) to mitigate Capacity Emergencies and Energy Emergencies within its Balancing Authority Area, including “Reliability impacts of extreme weather conditions.” In addition, Reliability Coordinators are required to review the Operating Plan(s) submitted by Balancing Authorities for compatibility, inter-dependency and coordination to avoid risk to Wide Area reliability.

Under Reliability Principles, we recommend that boxes 6 and 7 also be checked to:

Recognize the Generator Owner/Generator Operator training aspects proposed under the scope of this project; i.e. “Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.”

Recognize the Reliability Coordinator wide-area assessment and monitoring aspects associated with this project; i.e. “The security of the interconnected bulk power systems shall be assessed, monitored, and maintained on a wide area basis.”

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR DT will notate your recommendations for the SDT consideration once formed. Although it is known that some Regional Reliability Organizations already address generating unit performance as part of their market operations and may require actual testing as part of their cold weather preparation, the drafting team will consider including these areas in the standard and review the possible impacts of EOP-011.**

**The SAR DT does not agree with principle #6 and #7 being checked as those focus more on System Operator Certification and Cyber Security.**

|   |     |
|---|-----|
| <b>Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no NGrid</b>  |     |
| <b>Answer</b>   | Yes |
| <b>Document Name</b>  |     |
| <b>Comment</b>  |     |
| <p>Although we agree with the industry need for better preparation in extreme weather conditions and better situation awareness in both planning and operations, extreme cold is relative to where you are in North America. We suggest that the SAR should be modified to be more general, i.e extreme weather preparedness (removal of the word cold weather).</p>  |     |
| Likes 0   |     |
| Dislikes 0  |     |
| <p><b>Response: Thank you for your comment. The SAR drafting team revised the SAR to provide flexibility among the geographical regions.</b></p> <p><b>Response: Thank you for your comment. The standard referenced in your comments does not specifically address freezing issues that occur to combustion turbines, boilers and balance of plant equipment. Plant winterization plans have already been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions, but the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS. Although it is understood that market operations incent generator availability and lack of/poor performance can result in monetary penalties, plant freezing issues continue to occur when precautions have not been taken to prevent freezing during cold weather conditions. The SAR DT will notate the standards referenced in your comments for SDT consideration when developing modifications to the appropriate standards, if warranted.</b></p> |     |
| <b>Douglas Webb - Westar Energy - 1,3,5,6 - MRO, Group Name Westar-KCPL</b>   |     |
| <b>Answer</b>   | Yes |
| <b>Document Name</b>  |     |
| <b>Comment</b>  |     |

Westar Energy and Kansas City Power & Light endorse Edison Electric Institute's (EEl) response to Question 1.

Likes 0

Dislikes 0

**Response: Please see response to EEl.**

**Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company**

**Answer**

Yes

**Document Name**

**Comment**

While Southern Company support efforts to improve BES reliability during extreme cold weather, the scope of the SAR, as written, should be focused on actions that will improve generating unit availability and capability during all weather events; furthermore, the SAR should not introduce redundant requirements or revise existing standard requirements that already account for weather conditions, including extreme cold weather.

1. Consistent with the Cold Weather Event recommendations, the SAR should only be applicable to GO/GOP activities related to winterization efforts and associated communication to the RC and/or BA.
  - Design does not necessarily ensure generating unit capability, as each winter event is unique. Generating unit capability is ensured by proper maintenance, operation, and when necessary, preparation for inclement weather. "Parameters around operating temperatures" implies temperature design limits have been reviewed for each generating facility and that units will operate during extreme weather above a certain temperature. Actual operation is different than design, and each winter event will have unique characteristics, making it nearly impossible to guarantee operation above a certain pre-defined temperature. Additionally, the plant site dynamics will vary for each winter event, including whether adjacent units are running or offline prior to and during the winter event. The SAR, as written, could drive GOs/GOPs to declaring their units' availability uncertain below 32 degrees in order to ensure compliance with this new standard. This would provide little value to BES reliability. Therefore, Southern recommends that the SAR Drafting Team abandon the concept of defining a design temperature

for each generating facility, that may not be relevant from event to event, and instead include a requirement for Generator Owners to develop and implement winterization plans prior to the onset of winter weather.

- Additionally, the SAR is not specific on the type of firm transportation (FT) for natural gas supply obtained and what details would be required to be communicated to the BA and/or RC. In the SAR, bullet 1.e. is unnecessary and should be factored into 1.a. in the assessment of generating unit availability by the GO/GOP. Where-as primary FT guarantees point to point delivery, examples such as released capacity may not be secure under peak winter demand situations, even though it is classified as FT. The SAR also fails to outline expectations around Delivered gas, where the supplier utilizes their FT for delivery. Finally, the SAR makes no mention of other fuel commodities such as fuel oil inventory levels for oil-fired CTs.

2. No new standard requirements should be placed on the RC and/or BA, or where there is already a requirement for the GO/GOP to provide availability and capability information. There are several existing NERC standards that address generating resource availability and capability that address all kinds of conditions, including cold weather events, and a new or revised standard addressing availability and capability during one specific type of weather event is duplicative and unnecessary.

- FAC-008 – Requires Generator Owner to consider ambient conditions in establishing Facility Ratings.
- IRO-008 – Requires Reliability Coordinators to perform Operational Planning Analyses (next-day) and Real-time Assessments (every 30 minutes) to determine potential SOL and IROL exceedances; RCs are authorized to request information form Generator Owners necessary for conducting these analyses and assessments by way of NERC Standard IRO-010.
- IRO-010 – Authorizes the Reliability Coordinator to request and collect information necessary for performing Operational Planning Analyses, Real-time monitoring and Real-time Assessments.
- MOD-025 – Requires the Generator Owner to verify real and reactive capability and allows for the Transmission Planner to request an adjustment for different conditions.
- TOP-002 – Requires the Balancing Authority to have an Operating Plan (next-day) that specifically addresses expected generation resource availability (commitment and dispatch), reserve requirements and deliverability capability.
- TOP-003 – Authorizes the Balancing Authority to request and collect information necessary for performing Operational Planning Analyses, Real-time monitoring and Real-time Assessments.

|          |   |
|----------|---|
| Likes    | 0 |
| Dislikes | 0 |

**Response: Thank you for your comment. (1) The SAR drafting team encourages you to review the 2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018. (2) The SAR drafting team chose to keep the primary focus of the SAR on cold weather preparedness, which is consistent with the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018 Recommendation One. In response to a NERC Staff recommendation, the SAR DT modified the SAR to include communication of operating limitations due to all ambient weather conditions. The basis for NERC Staff's recommendation is that communication is important for reliability as it allows RCs and BAs to be better prepared for next day studies and even hour ahead studies. It is important that entities know that a unit can be counted on based on the data provided. NERC Staff recommended including the issue in this project, rather than addressing in a subsequent project, in the interest of administrative efficiency and to avoid the burdens that could come from having multiple successive versions of a standard become effective in a short time. (3) The SAR drafting team revised the SAR to provide flexibility among the geographical regions. (4) Although plant winterization plans have been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions, the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS. In addition, the standards referenced in your comments do not specifically address freezing issues that occur to combustion turbines, boilers and balance of plant equipment. These recommendations will be notated for the standards drafting team when formed. (5) The SAR DT agrees that resource adequacy is not intended to become a requirement and has modified the SAR accordingly. (6) Some Regional Reliability Organizations under their market rules already require that GO/GOPs formally identify and report fuel transportation issues, contract commitments, resource capability, capacity and dual-fuel availability. In response to a NERC Staff recommendation, the SAR DT modified the SAR to include communication of operating limitations due to all ambient weather conditions. (7) After evaluating 1.e, the SAR DT also agreed that bullet 1.e was not necessary. To address assessment of generating unit availability and expectations around delivered gas, the SAR drafting team determined that 1.d and 1.a should be modified to address these areas. Also, natural gas availability and delivery was the main focus of the South Central Cold Weather Event report recommendations and not fuel oil inventory. Additionally, the SAR drafting team removed the word 'technologies' from the SAR. Lastly, the SAR drafting team will notate your other recommendations for the SDT when formed.**

**Bruce Reimer - Manitoba Hydro - 1,3,5,6**

**Answer**

**Yes**

|   |     |
|---|-----|
| <b>Document Name</b>  |     |
| <b>Comment</b>  |     |
| Likes 0   |     |
| Dislikes 0  |     |
| <b>Response: The SAR drafting team thanks you for your support.</b>                               |     |
| Karie Barczak - DTE Energy - Detroit Edison Company - 3,4,5, Group Name DTE Energy - DTE Electric |     |
| <b>Answer</b>   | Yes |
| <b>Document Name</b>  |     |
| <b>Comment</b>  |     |
| Likes 0   |     |
| Dislikes 0  |     |
| <b>Response: The SAR drafting team thanks you for your support.</b>                               |     |
| Line Dufour - Hydro-Quebec Production - 5 - NPCC  |     |
| <b>Answer</b>   | Yes |
| <b>Document Name</b>  |     |
| <b>Comment</b>  |     |
| Likes 0   |     |
| Dislikes 0  |     |

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| <b>Response: The SAR drafting team thanks you for your support.</b>  |     |
|  |     |
| <b>Amy Casuscelli - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC</b>   |     |
| <b>Answer</b>  | Yes |
| <b>Document Name</b>   |     |
| <b>Comment</b>   |     |
|  |     |
| Likes 0  |     |
| Dislikes 0   |     |
| <b>Response: The SAR drafting team thanks you for your support.</b>  |     |
|  |     |
| <b>Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations</b> |     |
| <b>Answer</b>  | Yes |
| <b>Document Name</b>   |     |
| <b>Comment</b>   |     |
|  |     |
| Likes 0  |     |
| Dislikes 0   |     |
| <b>Response: The SAR drafting team thanks you for your support.</b>  |     |
|  |     |
| <b>Rachel Coyne - Texas Reliability Entity, Inc. - 10</b>  |     |
| <b>Answer</b>  |     |
| <b>Document Name</b>   |     |

## Comment

Texas RE has the following comments regarding the scope of the SAR:

- The SAR includes “Balancing Authority use of the information provided by the Generator Owner/Generator Operator to perform Operational Planning Analysis” as a deliverable in new or revised Reliability Standards. However, per TOP-002-4 Balancing Authorities are not required to perform an Operational Planning Analysis and are only required to create Operating Plan(s) for the next day.
- The Purpose or Goal states “To ensure optimal reliability by preparing generation for extreme cold weather performance and ensure situational awareness in both **planning** and operations by applicable registered entities.” However, the SAR does not include provision of associated parameters for generating unit availability for extreme cold weather performance to Transmission Planners (TPs) and Planning Coordinators (PCs). In order to prepare for extreme cold weather events, the impact of the events should be studied in the in the planning horizon as well rather than just identifying issues in next-day studies when it may be too late to develop solutions for the issues.
- The SAR discusses provision of “associated parameters for generating unit availability for extreme cold weather performance” to the RC, but does not address how the RC would use the data. The RC would need to Due to the vague language used in the definitions of OPA and RTA, it may be necessary to prescribe use of this data for the RCs OPA and RTA.
- The SAR discusses provision of “associated parameters for generating unit availability for extreme cold weather performance” to the RC, but does not include provision of data to the TOP. Since the TOP is required to perform the same analysis (OPA, RTA) as the RC, this data should be provided to the TOP as well and the TOP should be required to consider the data in its analysis.
- There are no parameters for what is considered “extreme” cold weather performance. Texas RE recommends the SAR provide guidance on simply cold weather performance. There is no mention of renewables fuel supply or protection measures. Certainly the BA, RC, and TOP should have information from the GO/GOPs that expect icing on blades or feathering of turbines at wind speed X. For consistency the technical basis document should provide discreet examples for GO/GOPs to provide to allow for consistency in application of the Standard.

- Natural gas is the only fuel mentioned as a potential fuel availability issue in the SAR, and the GO/GOP may not have the information necessary to inform the RC and BA about fuel supply. Gas availability may very well be beyond the control of the generating entity. Evaluation of freezing coal would also need to be considered for completeness.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR DT will notate all of your recommendations for the SDT when formed. In addition, after evaluating 1.e, the SAR DT also agreed that bullet 1.e was not necessary. To address assessment of generating unit availability and expectations around delivered gas, the SAR drafting team determined that 1.d and 1.a should be modified to address these areas. Also, natural gas availability and delivery was the main focus of the South Central Cold Weather Event report recommendations and not fuel oil inventory. Additionally, the SAR drafting team removed the word ‘technologies’ from the SAR. Lastly, the SAR drafting team will notate your other recommendations for the SDT when formed. Lastly, the SAR has been modified to clarify the ‘associated parameters...’**

|  |  |
|--|--|
| <b>2. Provide any additional comments for the SAR drafting team to consider, if desired.</b>   |  |
| <b>Matthew Nutsch - Seattle City Light - 1,3,4,5,6 - WECC</b>  |  |
| <b>Answer</b>  |  |
| <b>Document Name</b>   |  |
| <b>Comment</b>   |  |
| <p>Entities in northern North America should not be subject to the proposed Standard for the reasons discussed in question 1, above. We offer three options for achieving this.</p> <p>1) One approach to design of a Reliability Standard with Regional Variance might be to identify, using historical data of the United States National Weather Service or a similar organization, regions where freezing temperatures may be expected at some time in each three to five years. A map that clearly marks such regions should be included as an Attachment to the Standard.</p> <p>2) A second approach is to identify two regions as suggested above, but have different requirements in the Standard for each region. Entities of the southern region would be required to document, track, monitor, and evidence implementation of cold weather policies and procedures as envisioned in the SAR. Entities of the northern region would be required simply to have a document that states their winterization plans without having to meet specific sub-requirements as to content, implementation, tracking, or monitoring (they may be presumed already to do so by virtue of long experience in cold weather).</p> <p>3) A third approach might be to include a ‘trigger mechanism’ within the Standard. Such a trigger mechanism would control when the Standard would apply to an entity, i.e., if the entity suffered loss of availability of BES generation or transmission due to cold weather, that entity then would be required to document, track, and evidence implement of cold weather policies and procedures. A sunset clause would be appropriate, to the effect that after successfully maintaining availability for the next two or three cold weather events, the need to document, track, and evidence implementation of winterization would no longer be required until a future loss of availability occurs. Such a mechanism provides appropriate carrot and stick incentives. If an entity winterizes successfully by whatever means, it would not be subject to compliance monitoring, audits, and risk. If an entity does not, it can remove the compliance risk by demonstrating</p> |  |

successful winterization over the next two or three cold weather events (which might be 2-3 years for a northern entity and decades for a southern entity).

4) Both options could be combined.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR drafting team revised the SAR to provide flexibility among the geographical regions. In addition, the SAR drafting team will notate all of your recommendations for the SDT to consider when formed.**

**Tony Skourtas - Los Angeles Department of Water and Power - 1,3,5,6**

**Answer**

**Document Name**

**Comment**

Perhaps this project could use a geographic approach in restricting applicability to areas in which reliability could be impacted by extreme cold weather.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR drafting team revised the SAR to provide flexibility among the geographical regions. The SAR DT will notate your suggestion for the SDT to consider as they draft proposed revisions.**

**Tara Lightner - Sunflower Electric Power Corporation - 1 - MRO**

**Answer**

**Document Name**

## Comment

If FERC and NERC expect to have no adverse effects on the BES in the real-time operations horizon during extreme ambient conditions, then the same expectation should be placed on the planning horizons. There are numerous Reliability Standards already in place that should be assessing resource capability and availability for these extreme conditions to identify and mitigate shortages ahead of real-time. For example:

- FAC-008 and MOD-025 should ensure the GO and GOP know the capability and availability of their BES resources under diverse ambient conditions, including extreme cold weather. If they don't have this information or are providing false information, then that should be in scope today for the ERO.
- MOD-031 and MOD-032 should ensure the PC and BA request and receive information from each RP to know the capability and availability of BES resources within their area under diverse ambient conditions, including extreme cold weather. If they don't have this information or are provided false information, then that should be in scope today for the ERO.
- NERC Reliability Assessments and TPL-001 should ensure near-term/long-term planning studies only include BES resources that are known to have the capability and availability under the specified ambient conditions, including extreme cold weather/winter peak. If they are not studying these conditions or are including invalid resources, then that should be in scope today for the ERO.
- IRO-010 and TOP-003 should ensure the RC and BA request and receive information from each GO and GOP to know the capability and availability of BES resources in their area under diverse ambient conditions, including extreme cold weather. If they don't have this information or are provided false information, then that should be in scope today for the ERO.
- IRO-008, TOP-001 and TOP-002 should ensure the RC's and BA's Operational Planning Analysis and the RC's Real-time Assessment only includes BES resources that are known to have the capability and availability under the expected ambient conditions, including extreme cold weather/winter peak. If they are not assessing these conditions or are including invalid resources and/or Operating Plans, then that should be in scope today for the ERO.

If the ERO enforces these expectations, then it should either incent the GO/GOP to invest in improvements to be eligible for resource planning and BA/market dispatch (revenue) or the entities planning and operating the BES should have to acquire and dispatch other resources to maintain reliability and prevent recurrence of an event like January 17, 2018. This approach should also work in protecting the BES against other factors that impact resource capability and availability, which are becoming too frequent.

The drafting team should also be mindful of the practicality in creating more Reliability Standards that apply to nearly 1000 entities registered as a GO/GOP whose primary business is to sell power to the grid. With the proliferation of renewable resources, many of those GO/GOP entities are “non-utility” companies who are operating in RTO markets solely for revenue. The SAR proposal will most likely be very controversial with these entities and take years to develop and implement. Additionally, to secure industry approval, the result could be a Reliability Standard with weak requirements that does little to address the issue; and creates more administrative work for the registered entities (especially those who already routinely operate in cold weather conditions) with uncertain value. The ERO will also have to initiate monitoring of all 1000 of these entities, which may be inefficient and impractical.

A more effective and efficient method would be to ensure requirements for the PC, RC and BA (whose role and responsibility is to oversee resource adequacy within an area of the BES) are sufficient to address the emerging risk of grid transformation. This proactive approach would reduce the need to create projects continually to address the next event based on other factors.

Many northern GOs/GOPs do not have issues during extreme weather events (both hot and cold) and did not have an issue during the extreme cold weather event of January 17, 2018. A Standard developed for a GO/GOP to assure that a unit will always start is unrealistic and unsustainable. A generator owner could invest a large sum of money into winterizing their generator and it still may not start and perform as designed. The SAR should clearly address the communication of when a generator cannot perform as requested (to start, to ramp, etc.). This communication could include (but not limited to):

- De-rates of output due to snow/dust/ cloud cover/sun set times etc. to PV systems;
- Icing of turbine blades/over speed due to excess wind/cut out due to extreme cold for wind Facilities;
- Frozen and wet coal piles/hot-cold ambient temps that impact Mw outputs/etc. for fossil fuel plants; and
- Lack of water due to frozen water/EPA restrictions/etc. for hydro plants.

As you can see, every type of generator has some type of natural and outside rules that can limit its output. This SAR should address the communication of such information and not just training or installing freeze protection measures.

Finally, this SAR seems to propose Resource Adequacy as a requirement, which does not need to be part of a Reliability Standard focused on reliability during ambient conditions. In other words, a GO/GOP should perform its obligations pursuant to contract or market rules without the influence of a Reliability Standard, and a Reliability Standard should not dictate that a generator must perform in a certain way. The maintenance items within the FERC and NERC report should be “common sense” items that a GO/GOP would perform, in order

to operate as required. If there are a set of GOs/GOPs who do not perform due to some type of low (i.e., extreme cold weather) temperature parameters, then there could be a tariff or market process to reduce the credibility of the GO/GOP.

Likes 0

Dislikes 0

**Response: Thank you for your comment. (1) The SAR drafting team encourages you to review the *2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018*. (2) The SAR drafting team determined to keep the SAR focus to cold weather preparedness, which is consistent with the *2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018* Recommendation one. (3) The SAR drafting team revised the SAR to provide flexibility among the geographical regions. (4) Although plant winterization plans have been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions, the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS. In addition, those standards referenced in your comments do not specifically address freezing issues that occur to combustion turbines, boilers and balance of plant equipment. These recommendations will be notated for the standards drafting team when formed. (5) The SAR DT agrees that resource adequacy is not intended to become a requirement and has modified the SAR accordingly.**

**The SAR drafting team chose to keep the primary focus of the SAR on cold weather preparedness, which is consistent with the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018 Recommendation One. In response to a NERC Staff recommendation, the SAR DT modified the SAR to include communication of operating limitations due to all ambient weather conditions. The basis for NERC Staff's recommendation is that communication is important for reliability as it allows RCs and BAs to be better prepared for next day studies and even hour ahead studies. It is important that entities know that a unit can be counted on based on the data provided. NERC Staff recommended including the issue in this project, rather than addressing in a subsequent project, in the interest of administrative efficiency and to avoid the burdens that could come from having multiple successive versions of a standard become effective in a short time.**

**David Jendras - Ameren - Ameren Services - 1,3,6**

|  |  |
|--|--|
| <b>Answer</b>  |  |
| <b>Document Name</b>   |  |
| <b>Comment</b>   |  |
| <p>In addition, the North America Generator Forum (NAGF) does not support the proposed SAR for Cold Weather Authorization either. They too agree that most Generator Owners already have Cold Weather Preparation procedures and implementation in place. Cold weather-related outages typically involve previously unknown vulnerabilities.</p> <p>With MISO already looking at what FERC is putting out and addressing it, Ameren would prefer not to recreate the wheel, which is also what NAGF enforces in their comments. For instance, revising existing standards to address gaps in planning for “Extreme Weather Events” and developing a measurable definition for “Extreme Cold Weather.”</p>  |  |
| Likes 0  |  |
| Dislikes 0   |  |
| <p><b>Response: Thank you for your comment. (1) It is understood that cold weather-related guidelines, checklists, surveys, testing, etc., have been established by Regional Reliability Organizations; but the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS although plant winterization plans have already been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions. Since the NERC Winter Guidelines, which posted in 2013, other cold weather related outages have happened. This has led to the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018. (2) It was determined during analysis of the 2018 South Central Cold Weather event, that some GO/GOPs still do not have winterization plans as recommended as a result of the 2011 Southwest Cold Weather Event. (3) The SAR drafting team removed the word ‘extreme’ from the SAR; therefore, a glossary term may not be needed. (4) Lastly, the SAR drafting team revised the SAR to provide flexibility among the geographical regions. The SAR DT will notate your suggestion for the SDT to consider as they draft proposed revisions.</b></p> |  |
| <p><b>Douglas Webb - Westar Energy - 1,3,5,6 - MRO, Group Name Westar-KCPL</b></p>   |  |
| <b>Answer</b>  |  |

|  |  |
|--|--|
| <b>Document Name</b>   |  |
| <b>Comment</b>   |  |
| None.  |  |
| Likes 0  |  |
| Dislikes 0   |  |
| <b>Response:</b>   |  |
|  |  |
| <b>Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations</b>   |  |
| <b>Answer</b>  |  |
| <b>Document Name</b>   |  |
| <b>Comment</b>   |  |
| Thank you for the opportunity to comment. Cost Impacts are an important aspect to be studied. Company budget cycles are requested to be measured as a consideration in the time-extension decisions. |  |
| Likes 0  |  |
| Dislikes 0   |  |
| <b>Response: The drafting team appreciates your response and cost impacts will be considered through the modification phase.</b>   |  |
|  |  |
| <b>Bobbi Welch - Midcontinent ISO, Inc. - 2 - MRO,SERC,RF</b>  |  |
| <b>Answer</b>  |  |
| <b>Document Name</b>   |  |
| <b>Comment</b>   |  |

Some suggested modifications to language in the SAR are provided below:

1. Generator Owner/Generator Operator develops, ***maintains and implements*** winterization plans, procedures, and winter-specific and plant-specific operator awareness training, ***including consideration of the following*** elements: a. Generating unit ***output and*** availability; b. ***Operating*** parameters around ***ambient*** temperatures; c. Implementing freeze protection measures and technologies; d. Performing periodic adequate maintenance and inspection of freeze protection measures and technologies; and e. Ensuring gas-fueled generating units' Reliability Coordinator and Balancing Authority are provided notification of firm transportation capacity for natural gas supply.
2. Generator Owner/Generator Operator communicates with the Balancing Authorities and Reliability Coordinators associated parameters for generating unit ***output and*** availability for extreme cold weather performance.
3. Generator Owners/Generator Operator communicates with the Balancing Authorities and Reliability Coordinators when expected temperatures are forecasted within the determined generating unit availabilities, expected ***output and*** availability of the generating units for the appropriate next day operating horizon.
4. Balancing Authority use of the information provided by the Generator Owner/Generator Operator to perform Operational Planning Analysis, and determine the expected ***output and*** availability ***of*** contingency reserves for the appropriate next day operating horizon.

For bullet #4, MISO recommends the word “and” be replaced with the word “of” to indicate the requirement is to assess the forecasted sufficiency of reserves for the next day operating horizon as opposed to revisiting the annual determination of the Most Severe Single Contingency (MSSC).

Likes 0

Dislikes 0

**Response: Thank you for your comments. The SAR has been modified based on overall comments received. Please review the modified SAR.**

|   |  |
|---|--|
| <b>Jonathan Robbins - Seminole Electric Cooperative, Inc. - 1,3,4,5,6</b>   |  |
| <b>Answer</b>   |  |
| <b>Document Name</b>  |  |
| <b>Comment</b>  |  |
| <ul style="list-style-type: none"> <li>• The resulting standard could become onerous for GO's to comply with           <ul style="list-style-type: none"> <li>○ Will evidence and communication regarding routine maintenance of plant heat trace system and components be required?</li> <li>○ Would winter specific and plant specific awareness training create the need for a whole certification program to NERC?</li> </ul> </li> <li>• Could this be simplified by requiring the GO to provide their minimum operating temperature or by the standard only be applicable to locations that experience extreme cold weather?</li> </ul> |  |
| Likes 0   |  |
| Dislikes 0  |  |
| <b>Response: Thank you for your comment. The SAR drafting team revised the SAR to provide flexibility among the geographical regions. The SAR DT will notate your suggestion for the SDT to consider as they draft proposed revisions.</b>  |  |
| <b>sean erickson - Western Area Power Administration - 1,6</b>  |  |
| <b>Answer</b>   |  |
| <b>Document Name</b>  |  |
| <b>Comment</b>  |  |
| <p>If FERC and NERC expect to have no adverse effects on the BES in the real-time operations horizon during extreme ambient conditions, then the same expectation should be placed on the planning horizons. There are numerous Reliability Standards already in place that should be assessing resource capability and availability for these extreme conditions to identify and mitigate shortages ahead of real-time. For example:</p>   |  |

{C}- FAC-008 and MOD-025 should ensure the GO and GOP know the capability and availability of their BES resources under diverse ambient conditions, including extreme cold weather. If this information is unavailable or incorrect, then that should be in scope today for the ERO.

{C}- MOD-031 and MOD-032 should ensure the PC and BA request and receive information from each RP to know the capability and availability of BES resources within their area under diverse ambient conditions, including extreme cold weather. If this information is unavailable or incorrect, then that should be in scope today for the ERO.

{C}- NERC Reliability Assessments and TPL-001 should ensure near-term/long-term planning studies only include BES resources that are known to have the capability and availability under the specified ambient conditions, including extreme cold weather/winter peak. If they are not studying these conditions or are including invalid resources, then that should be in scope today for the ERO.

{C}- IRO-010 and TOP-003 should ensure the RC and BA request and receive information from each GO and GOP to know the capability and availability of BES resources in their area under diverse ambient conditions, including extreme cold weather. If this information is unavailable or incorrect, then that should be in scope today for the ERO.

{C}- IRO-008, TOP-001 and TOP-002 should ensure the RC's and BA's Operational Planning Analysis and the RC's Real-time Assessment only includes BES resources that are known to have the capability and availability under the expected ambient conditions, including extreme cold weather/winter peak. If they are not assessing these conditions or are including invalid resources and/or Operating Plans, then that should be in scope today for the ERO.

If the ERO enforces these expectations, then it should either incent the GO/GOP to invest in improvements to be eligible for resource planning and BA/market dispatch (revenue) or the entities planning and operating the BES should have to acquire and dispatch other resources to maintain reliability and prevent recurrence of an event like January 17, 2018. This approach should also work in protecting the BES against other factors that impact resource capability and availability, which are becoming too frequent.

The drafting team should also be mindful of the practicality in creating more Reliability Standards that apply to nearly 1000 entities registered as a GO/GOP whose primary business is to sell power to the grid. With the proliferation of renewable resources, many of those GO/GOP entities are "non-utility" companies who are operating in RTO markets solely for revenue. The SAR proposal will most likely be very controversial with these entities. Additionally, to secure industry approval, the result could be a Reliability Standard with weak requirements that does little to address the issue; and creates more administrative work for the registered entities (especially those

who already routinely operate in cold weather conditions) with uncertain value. The ERO will also have to initiate monitoring of all 1000 of these entities, which may be inefficient and impractical.

A more effective and efficient method would be to ensure requirements for the PC, RC and BA (whose role and responsibility is to oversee resource adequacy within an area of the BES) are sufficient to address the emerging risk of grid transformation. This proactive approach would reduce the need to create projects continually to address the next event based on other factors.

Many northern GOs/GOPs do not have issues during extreme weather events (both hot and cold), and did not have an issue during the extreme cold weather event of January 17, 2018. A Standard developed for a GO/GOP to assure that a unit will always start is unrealistic and unsustainable. A generator owner could invest a large sum of money into winterizing their generator and it still may not start and perform as designed. The SAR should clearly address the communication of when a generator cannot perform as requested (to start, to ramp, etc.). This communication could include (but not limited to):

- De-rates of output due to snow/dust/ cloud cover/sun set times etc. to PV systems;
- Icing of turbine blades/over speed due to excess wind/cut out due to extreme cold for wind Facilities;
- Frozen and wet coal piles/hot-cold ambient temps that impact Mw outputs/etc. for fossil fuel plants; and
- Lack of water due to frozen water/EPA restrictions/etc. for hydro plants.

As you can see, every type of generator has some type of natural and outside rules that can limit its output. This SAR should address the communication of such information and not just training or installing freeze protection measures.

Finally, this SAR seems to propose Resource Adequacy as a requirement, which does not need to be part of a Reliability Standard focused on reliability during ambient conditions. In other words, a GO/GOP should perform its obligations pursuant to contract or market rules without the influence of a Reliability Standard, and a Reliability Standard should not dictate that a generator must perform in a certain way. The maintenance items within the FERC and NERC report should be “common sense” items that a GO/GOP would perform, in order to operate as required. If there are a set of GOs/GOPs who do not perform due to some type of low (i.e., extreme cold weather) temperature parameters, then there could be a tariff or market process to reduce the credibility of the GO/GOP.

|          |   |
|----------|---|
| Likes    | 0 |
| Dislikes | 0 |

**Response: Thank you for your comment. The standard referenced in your comments does not specifically address freezing issues that occur to combustion turbines, boilers and balance of plant equipment. Plant winterization plans have already been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions, but the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS. Although it is understood that market operations incent generator availability and lack of/poor performance can result in monetary penalties, plant freezing issues continue to occur when precautions have not been taken to prevent freezing during cold weather conditions. The SAR drafting team will notate the standards referenced in your comments for SDT consideration when developing modifications to the appropriate standards, if warranted.**

**Dennis Sismaet - Northern California Power Agency - 5,6**

**Answer**

**Document Name**

**Comment**

None

Likes 0

Dislikes 0

**Response:**

**Amy Casuscelli - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC**

**Answer**

**Document Name**

**Comment**

Xcel Energy believes that the SAR could be easility addressed by modifying already existing standards. For instance, weather conditions considered "extreme" and their effects likely have regional variability depending on historical events and might be best addressed by Regional data specifications. Regional data specifications are addressed in existing Standard IRO-010-2 R1-R3. Further, data specifications for Operational Planning assessments are addressed in existing Standard TOP-003-3. Fuel supply and reliablity impacts of extreme weather conditions are addressed by EOP-011 R2.2.3.2 and 2.2.9 respectively.

We suggust that variability between extreme weather conditions between regions and their effects on Generators, Generator Operators, Balancing Authorities and Reliability Coordinators an approach similar to EOP-010-1 should be considered. A Standard where the individual RCs develop, maintain and implement an Extreme Cold Weather Preparedness Operating Plan that coordinates Operating Procedures or Operating Processes within its Reliability Coordinator Area and each GOP, GO and BA and other affected entities develop, maintain and implement an Extreme Cold Weather Preparedness Plan Operating Procedure or Operating Process to mitigate the effects of Extreme Cold Weather events on the reliable operation of its respective system.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR drafting team will notate your recommendations for the SDT to consider when formed.**

**Wayne Sipperly - North American Generator Forum - 1,2,3,6 - MRO,WECC,Texas RE,NPCC,SERC,RF**

**Answer**

**Document Name**

**Comment**

The NAGF recommends the following prior to implementing any new weather-related Reliability Standard for Generator Owner / Operators:

1. Prior to developing a new standard, revise existing standards to address gaps in planning for "Extreme Weather Events"

- i. Reliability Assessments, TPL-001, IRO-010 and TOP-003 can all be strengthened to ensure the RC and BA request and receive information from GO / GOP to plan for various “Extreme Weather Events”.
- 2. Develop a measurable definition for “Extreme Cold Weather”. This likely would need to be based on regional assessments and account for changing weather patterns rather than just averages.
- 3. Develop cause codes for GADs that address outages, start-up failures and curtailments attributed directly to extreme cold weather. This would allow for meaningful data collection that could be useful in future mitigation.
- 4. Encourage BA / TOP / RC to develop criteria to dispatch units with extended start-up periods early to allow for pre-warming.
  - i. Instead of cycling natural gas Combined Cycle units, dispatch units at a lower load so that they are warm and available when needed.
- 5. Encourage TOP / TP / BA to schedule planned outage seasons with regard to changing weather patterns.
- 6. If a cold weather standard is eventually developed do not use ambiguous language (“Parameters around operating temperatures”), treat equipment failures as NERC violations (“adequate” measures), or expect GO/GOPs to communicate information they do not possess (“notification of firm transportation capacity for natural gas supply”).
- 7. Support research on the weaknesses of IEEE-515 and misapplication of this standard by heat tracing and insulation contractors, particularly as regards quantifying the effects of failing to properly account for uninsulated valve bonnets, actuators and pipe supports, and spiraling insulation instead of bunching it at valves, traps and other devices.
- 8. The NAGF is interested in working with the FERC and NERC to assist those entities identified in the *South Central United States Cold Weather Bulk Electronic System Event of January 17, 2018 Report* and industry to strengthen generation cold weather plans/processes where needed.

Likes 0

Dislikes 0

**Response: Thank you for your comments. The SAR drafting team modified the SAR to address the concern around ‘parameters around operating...’**

The SAR drafting team discussed at length ‘Extreme Cold Weather’ and how it could be considered a subset of cold weather. The SAR drafting team revised the SAR to provide flexibility among the geographical regions. The SAR DT will notate your suggestions for the SDT to consider as they draft proposed revisions.

The SAR drafting team removed ‘firm capacity’ from the SAR.

**Line Dufour - Hydro-Quebec Production - 5 - NPCC**

Answer

Document Name

Comment

N/A

Likes 0

Dislikes 0

**Response: The SAR drafting team appreciates your response and support.**

**Rachel Coyne - Texas Reliability Entity, Inc. - 10**

Answer

Document Name

Comment

Texas RE suggests including applicable planning entities as well as the TOP.

Likes 0

Dislikes 0

**Response:** Thank you for your comment. The SAR DT chose to keep the scope of work consistent with the *2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018* recommendation one, which addressees, Generators, BAs, and RCs.

**Theresa Allard - Minnkota Power Cooperative Inc. - 1**

**Answer**

**Document Name**

**Comment**

If FERC and NERC expect to have no adverse effects on the BES in the real-time operations horizon during extreme ambient conditions, then the same expectation should be placed on the planning horizons. There are numerous Reliability Standards already in place that should be assessing resource capability and availability for these extreme conditions to identify and mitigate shortages ahead of real-time. For example:

- FAC-008 and MOD-025 should ensure the GO and GOP know the capability and availability of their BES resources under diverse ambient conditions, including extreme cold weather. If they do not have this information or are providing false information, then that should be in scope today for the ERO.
- MOD-031 and MOD-032 should ensure the PC and BA request and receive information from each RP to know the capability and availability of BES resources within their area under diverse ambient conditions, including extreme cold weather. If they do not have this information or are provided false information, then that should be in scope today for the ERO.
- NERC Reliability Assessments and TPL-001 should ensure near-term/long-term planning studies only include BES resources that are known to have the capability and availability under the specified ambient conditions, including extreme cold weather/winter peak. If they are not studying these conditions or are including invalid resources, then that should be in scope today for the ERO.

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The drafting team should also be mindful of the practicality in creating more Reliability Standards that apply to nearly 1000 entities registered as a GO/GOP whose primary business is to sell power to the grid. With the proliferation of renewable resources, many of those GO/GOP entities are “non-utility” companies who are operating in RTO markets solely for revenue. The SAR proposal will most likely be very controversial with these entities and take years to develop and implement. Additionally, to secure industry approval, the result could be a Reliability Standard with weak requirements that does little to address the issue; and creates more administrative work for the registered entities (especially those who already routinely operate in cold weather conditions) with uncertain value. The ERO will also have to initiate monitoring of all 1000 of these entities, which may be inefficient and impractical.

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Likes 0

Dislikes 0

**Response: Thank you for your comment. The standard referenced in your comments does not specifically address freezing issues that occur to combustion turbines, boilers and balance of plant equipment. Plant winterization plans have already been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions, but the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS. Although it is understood that market operations incent generator availability and lack of/poor performance can result in monetary penalties, plant freezing issues continue to occur when precautions have not been taken to prevent freezing during cold weather conditions. The SAR drafting team will notate the standards referenced in your comments for SDT consideration when developing modifications to the appropriate standards, if warranted.**

**Lastly, the SAR drafting team revised the SAR to provide flexibility among the geographical regions. The SAR DT will notate your suggestion for the SDT to consider as they draft proposed revisions.**

**Joseph DePoorter - MGE Energy - Madison Gas and Electric Co. - 3,4,5,6**

**Answer**

**Document Name**

**Comment**

If FERC and NERC expect to have no adverse effects on the BES in the real-time operations horizon during extreme ambient conditions, then the same expectation should be placed on the planning horizons. There are numerous Reliability Standards already in place that should be assessing resource capability and availability for these extreme conditions to identify and mitigate shortages ahead of real-time. For example:

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- MOD-031 and MOD-032 should ensure the PC and BA request and receive information from each RP to know the capability and availability of BES resources in their area under various ambient conditions, including extreme cold weather. If they don't have this information or are provided false information, then that should be in scope today for the ERO.
- NERC Reliability Assessments and TPL-001 should ensure near-term/long-term planning studies only include BES resources that are known to have the capability and availability under the specified ambient conditions, including extreme cold weather/winter peak. If they are not studying these conditions or are including invalid resources, then that should be in scope today for the ERO.
- IRO-010 and TOP-003 should ensure the RC and BA request and receive information from each GO and GOP to know the capability and availability of BES resources in their area under various ambient conditions, including extreme cold weather. If they don't have this information or are provided false information, then that should be in scope today for the ERO.
- IRO-008, TOP-001 and TOP-002 should ensure the RC's and BA's Operational Planning Analysis and the RC's Real-time Assessment only includes BES resources that are known to have the capability and availability under the expected ambient conditions,

including extreme cold weather/winter peak. If they are not assessing these conditions or are including invalid resources and/or Operating Plans, then that should be in scope today for the ERO.

If the ERO enforces these expectations, then it should either incentivize the GO/GOP to invest in improvements to be eligible for resource planning and BA/market dispatch (revenue) or the entities planning and operating the BES should have to acquire and dispatch other resources to maintain reliability and prevent recurrence of an event like January 17, 2018. This approach should also work in protecting the BES against other factors that impact resource capability and availability, which are becoming too frequent.

The drafting team should also be mindful of the practicality in creating more Reliability Standards that apply to nearly 1000 entities registered as GO/GOP whose primary business is to sell power to the grid. With the proliferation of renewable resources, many of those GO/GOP entities are “non-utility” companies who are operating in RTO markets solely for revenue. This will most likely be very controversial with them and take years to develop and implement. To get industry approval the end result could be a Standard with weak requirements that does little to address the issue. This could create more administrative work for the registered entities (especially those who already routinely operate in cold weather conditions) with uncertain value. The ERO will also have to initiate monitoring on all 1000 of these entities, which may be inefficient and impractical.

A more effective and efficient method would be to ensure requirements for the PC, RC and BA (whose role and responsibility is to oversee resource adequacy within an area of the BES) are sufficient to address the emerging risk of grid transformation. This proactive approach would reduce the need to continually create a project to address the next event based on other factors.

This SAR has its positive and negative aspects which is based on the FERC and NERC report. Many northern GOs do not and did not have an issue with the cold (or hot) weather event. A Standard developed for a GO to assure that a unit will always start will be a magical instrument. A generator owner could invest a large sum of money into winterizing their generator and it still may not start and perform as designed. The SAR should clearly address the communication of when a generator cannot perform as requested (to start, to ramp, etc.). This would include; derates of output due to snow/dust/ cloud cover/sun set times etc. to PV systems, icing of turbine blades/over speed due to excess wind/cut out due to extreme cold for wind Facilities, frozen and wet coal piles/hot-cold ambient temps that impact Mw outputs/etc. for fossil fuel plants, lack of water due to frozen water/EPA restrictions/etc. for hydro plants. As you can see, every type of generator has some type of natural and outside rules that can limit its output. This SAR should address the communication of such information not just training or installing freeze protection measures.

A Standard should not incent an entity to perform as the state they can as this is a market issue. This SAR is developing Resource Adequacy which does not need to a Reliability Standard. The maintenance items within the FERC and NERC report should be common

sense items that a GO would perform, in order to perform as required. If there are a set of GOs who do not perform due to some type of (low) temperature parameters, then there could be a tariff or market process to reduce the credibility of the GO.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The standard referenced in your comment does not specifically address freezing issues that occur to combustion turbines, boilers and balance of plant equipment. Plant winterization plans have already been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions, but the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS. Although it is understood that market operations incentive generator availability and lack of/poor performance can result in monetary penalties, plant freezing issues continue to occur when precautions have not been taken to prevent freezing during cold weather conditions. The SAR drafting team will notate the standards referenced in your comments for SDT consideration when developing modifications to the appropriate standards, if warranted.**

**Daniel Gacek - Exelon - 1,3,5,6**

**Answer**

**Document Name**

**Comment**

The shortcoming of the proposed SAR scope is it tries to address a regional problem, i.e., failure of generation during cold weather in traditionally warm-weather locales, with an international solution. The Standard should be performance-based, describing the outcome desired, and not prescriptive of actions which may or may not result in the outcome desired. If the overall goal of the Standard is to ensure better winter generation performance, then the Requirements should apply more to those generators that have failed to perform in cold weather. Similar to other Standards, exemptions should apply for those generators that have not experienced operational interruptions due to cold weather, with increasing requirements for those that have had the worst operation and would benefit the most from increased oversight. As performance improves, the need for oversight lessens and this lessening is built into the Standard. The SAR should clearly communicate the intent is improvement in generation performance in areas that have been lacking.

The concept that there is a single “ambient temperature limit” that applies to a generator unit is not universally accurate. Different temperature limits may apply for HVAC systems, water systems, etc. however these limiting design temperatures are routinely extended by use of mitigating actions. Especially in regions that routinely experience cold weather, mitigating operations such as the application of heaters, re-routing of warmed condenser water, flushing/draining of systems, alternate or standby operation of parallel components are taken during extreme conditions. In addition, these components are typically located in enclosed buildings protected from the weather making the determination of a single ambient design temperature moot. The laborious determination of each nominal minimum operating temperature for the tens of systems and thousands of components within a generating station, when seasonal preparation actions and contemporary operator actions routinely mitigate the impact of both hot and cold weather operation, do nothing to prove the operational capability of the generating unit. The most reliable indication of low-temperature capability is the actual minimum temperature recorded at which the generating unit has successfully operated at not the application of an "ambient temperature limit".

The “Additional elements to consider may include” recommendations should be located in technical guidance and not included as auditable requirements. For example, if the general location of a motor control center in a building keeps the MCC warm enough without a heater, then specifying in a Standard that MCCs should have heaters adds nothing to the BES reliability. By including detailed requirements that must be considered and dispositioned for every component creates a situation in which large lists of components are maintained to prove to auditors that mitigating features have been considered, with attendant burdens in storage, retrieval, and maintenance, with no gain in operating capability. Again, the Standard should focus on the performance required, not the means to achieve it.

The “Detailed description” section includes, “Generator Owner/Generator Operator communicates with the Balancing Authorities and Reliability Coordinators associated parameters for generating unit availability for extreme cold weather performance “ What does “associated parameters for generating unit availability” mean?

The proposed Standard development/revisions should take maximum advantage of existing Standards and any new Standard should be general enough to reflect the wide variation in generator unit types, geographical and meteorological conditions, and historical generator experience in coping with cold weather.

Items such as “training” need not be a separate training module in already burdened training schedules (especially for nuclear generating units). That is, the technical basis or reference sections of winterizing procedures, “Just in Time” training and briefings as cold weather preparations begin, should be sufficient. The Standard should not conflict with or repeat requirements already embodied in ISO operating manuals with which GOs must comply.

For those generators which routinely operate in cold weather the Standard is not required. Any new requirements should be geared to improving the operation of generators which do not.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR has been modified based on the 'associated parameters'. The SAR drafting team revised the SAR to provide flexibility among the geographical regions. In addition, the SAR drafting team will notate all of your recommendations for the SDT to consider when formed.**

**Rodney Warner - PNM Resources - Public Service Company of New Mexico - 1 - WECC**

Answer

Document Name

Comment

None

Likes 0

Dislikes 0

**Response:**

**Larry Heckert - Alliant Energy Corporation Services, Inc. - 4**

Answer

Document Name

Comment

If FERC and NERC expect to have no adverse effects on the BES in the real-time operations horizon during extreme ambient conditions, then the same expectation should be placed on the planning horizons. There are numerous Reliability Standards already in place that should be assessing resource capability and availability for these extreme conditions to identify and mitigate shortages ahead of real-time. For example:

FAC-008 and MOD-025 should ensure the GO and GOP know the capability and availability of their BES resources under diverse ambient conditions, including extreme cold weather.

MOD-031 and MOD-032 should ensure the PC and BA request and receive information from each RP to know the capability and availability of BES resources within their area under diverse ambient conditions, including extreme cold weather.

NERC Reliability Assessments and TPL-001 should ensure near-term/long-term planning studies only include BES resources that are known to have the capability and availability under the specified ambient conditions, including extreme cold weather/winter peak.

IRO-010 and TOP-003 should ensure the RC and BA request and receive information from each GO and GOP to know the capability and availability of BES resources in their area under diverse ambient conditions, including extreme cold weather.

IRO-008, TOP-001 and TOP-002 should ensure the RC's and BA's Operational Planning Analysis and the RC's Real-time Assessment only includes BES resources that are known to have the capability and availability under the expected ambient conditions, including extreme cold weather/winter peak.

If the ERO enforces these expectations, then it should either incent the GO/GOP to invest in improvements to be eligible for resource planning and BA/market dispatch (revenue) or the entities planning and operating the BES should have to acquire and dispatch other resources to maintain reliability and prevent recurrence of an event like January 17, 2018.

Many northern GOs/GOPs do not have issues during extreme weather events (both hot and cold), and did not have an issue during the extreme cold weather event of January 17, 2018. A Standard developed for a GO/GOP to assure that a unit will always start, which could require the investment of a large sum of money for winterizing their generator, seems unrealistic.

The SAR should clearly address the communication of when a generator cannot perform as requested (to start, to ramp, etc.). This communication could include:

- De-rates of output due to snow/dust/ cloud cover/sun set times etc. to PV systems;
- Icing of turbine blades/over speed due to excess wind/cut out due to extreme cold for wind facilities;
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Likes 0

Dislikes 0

**Response: Thank you for your comment. The standard referenced in your comment does not specifically address freezing issues that occur to combustion turbines, boilers and balance of plant equipment. Plant winterization plans have already been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions, but the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS. Although it is understood that market operations incent generator availability and lack of/poor performance can result in monetary penalties, plant freezing issues continue to occur when precautions have not been taken to prevent freezing during cold weather conditions. The SAR DT will notate the standards referenced in your comments for SDT consideration when developing modifications to the appropriate standards, if warranted.**

**The SAR drafting team chose to keep the primary focus of the SAR on cold weather preparedness, which is consistent with the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018 Recommendation One. In response to a NERC Staff recommendation, the SAR DT modified the SAR to include communication of**

operating limitations due to all ambient weather conditions. The basis for NERC Staff's recommendation is that communication is important for reliability as it allows RCs and BAs to be better prepared for next day studies and even hour ahead studies. It is important that entities know that a unit can be counted on based on the data provided. NERC Staff recommended including the issue in this project, rather than addressing in a subsequent project, in the interest of administrative efficiency and to avoid the burdens that could come from having multiple successive versions of a standard become effective in a short time.

**Michael Brytowski - Great River Energy - 1,3,5,6 - MRO**

**Answer**

**Document Name**

**Comment**

If FERC and NERC expect to have no adverse effects on the BES in the real-time operations horizon during extreme ambient conditions, then the same expectation should be placed on the planning horizons. There are numerous Reliability Standards already in place that should be assessing resource capability and availability for these extreme conditions to identify and mitigate shortages ahead of real-time.

For example:

- FAC-008 and MOD-025 should ensure the GO and GOP know the capability and availability of their BES resources under diverse ambient conditions, including extreme cold weather. If they don't have this information or are providing false information, then that should be in scope today for the ERO.
- MOD-031 and MOD-032 should ensure the PC and BA request and receive information from each RP to know the capability and availability of BES resources within their area under diverse ambient conditions, including extreme cold weather. If they don't have this information or are provided false information, then that should be in scope today for the ERO.
- NERC Reliability Assessments and TPL-001 should ensure near-term/long-term planning studies only include BES resources that are known to have the capability and availability under the specified ambient conditions, including extreme cold weather/winter peak. If they are not studying these conditions or are including invalid resources, then that should be in scope today for the ERO.
- IRO-010 and TOP-003 should ensure the RC and BA request and receive information from each GO and GOP to know the capability and availability of BES resources in their area under diverse ambient conditions, including extreme cold weather. If they don't have this information or are provided false information, then that should be in scope today for the ERO.

• IRO-008, TOP-001 and TOP-002 should ensure the RC's and BA's Operational Planning Analysis and the RC's Real-time Assessment only includes BES resources that are known to have the capability and availability under the expected ambient conditions, including extreme cold weather/winter peak. If they are not assessing these conditions or are including invalid resources and/or Operating Plans, then that should be in scope today for the ERO.

If the ERO enforces these expectations, then it should either incent the GO/GOP to invest in improvements to be eligible for resource planning and BA/market dispatch (revenue) or the entities planning and operating the BES should have to acquire and dispatch other resources to maintain reliability and prevent recurrence of an event like January 17, 2018. This approach should also work in protecting the BES against other factors that impact resource capability and availability, which are becoming too frequent.

The drafting team should also be mindful of the practicality in creating more Reliability Standards that apply to nearly 1000 entities registered as a GO/GOP whose primary business is to sell power to the grid. With the proliferation of renewable resources, many of those GO/GOP entities are "non-utility" companies who are operating in RTO markets solely for revenue. The SAR proposal will most likely be very controversial with these entities and take years to develop and implement. Additionally, to secure industry approval, the result could be a Reliability Standard with weak requirements that does little to address the issue; and creates more administrative work for the registered entities (especially those who already routinely operate in cold weather conditions) with uncertain value. The ERO will also have to initiate monitoring of all 1000 of these entities, which may be inefficient and impractical.

A more effective and efficient method would be to ensure requirements for the PC, RC and BA (whose role and responsibility is to oversee resource adequacy within an area of the BES) are sufficient to address the emerging risk of grid transformation. This proactive approach would reduce the need to create projects continually to address the next event based on other factors.

Many northern GOs/GOPs do not have issues during extreme weather events (both hot and cold), and did not have an issue during the extreme cold weather event of January 17, 2018. A Standard developed for a GO/GOP to assure that a unit will always start is unrealistic and unsustainable. A generator owner could invest a large sum of money into winterizing their generator and it still may not start and perform as designed. The SAR should clearly address the communication of when a generator cannot perform as requested (to start, to ramp, etc.). This communication could include (but not limited to):

- De-rates of output due to snow/dust/ cloud cover/sun set times etc. to PV systems;
- Icing of turbine blades/over speed due to excess wind/cut out due to extreme cold for wind Facilities;
- Frozen and wet coal piles/hot-cold ambient temps that impact Mw outputs/etc. for fossil fuel plants; and
- Lack of water due to frozen water/EPA restrictions/etc. for hydro plants.

As you can see, every type of generator has some type of natural and outside rules that can limit its output. This SAR should address the communication of such information and not just training or installing freeze protection measures.

Finally, this SAR seems to propose Resource Adequacy as a requirement, which does not need to be part of a Reliability Standard focused on reliability during ambient conditions. In other words, a GO/GOP should perform its obligations pursuant to contract or market rules without the influence of a Reliability Standard, and a Reliability Standard should not dictate that a generator must perform in a certain way. The maintenance items within the FERC and NERC report should be "common sense" items that a GO/GOP would perform, in order to operate as required. If there are a set of GOs/GOPs who do not preform due to some type of low (i.e., extreme cold weather) temperature parameters, then there could be a tariff or market process to reduce the credibility of the GO/GOP.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The standard referenced in your comments does not specifically address freezing issues that occur to combustion turbines, boilers and balance of plant equipment. Plant winterization plans have already been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions, but the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS. Although it is understood that market operations incent generator availability and lack of/poor performance can result in monetary penalties, plant freezing issues continue to occur when precautions have not been taken to prevent freezing during cold weather conditions. The SAR DT will notate the standards referenced in your comments for SDT consideration when developing modifications to the appropriate standards, if warranted.**

**Marty Hostler - Northern California Power Agency - 5,6**

**Answer**

**Document Name**

**Comment**

NO.

|   |   |
|---|---|
| Likes   | 0 |
| Dislikes  | 0 |
| <b>Response:</b>  |   |
|   |   |
| <b>Bette White - AES - Indianapolis Power and Light Co. - 3</b>   |   |
| <b>Answer</b>   |   |
| <b>Document Name</b>  |   |
| <b>Comment</b>  |   |
| <p>IPL does not agree with all the Detailed Description provided in the SAR to support the scope. IPL takes exception to the following items for the stated reasons:</p> <ol style="list-style-type: none"> <li>1. If generating unit availability is measured differently than it currently is, this could impose undue burden on utilities due to potential additional studies and reporting activities.</li> <li>2. Documented operating temperature parameters pose a significant burden on established generating stations that did not likely have documented operating parameters defined when they were built. For older plants, would historical operational data be sufficient? Or would time consuming, expensive studies be required?</li> <li>3. Weather conditions vary significantly throughout the US based on location and geography. If operating temperature parameters are specified, they need to include consideration of regional weather patterns, altitude, etc.</li> <li>4. Adding the word “technologies” into the proposed verbiage introduces the potential for conscriptive, and potentially expensive, preparation/remediation measures. Simply stating “Implementing effective freeze protection measures.” would cover traditional means as well as any emerging technologies that might spring up as a result of this new standard.</li> <li>5. Introducing the thought of “firm gas transportation” into the language implies utilities must have firm transport contracts. This infringes on a company’s decision on how to utilize the Market processes and will likely provide undo excessive costs. It also focuses</li> </ol> |   |

solely on natural gas a fuel rather than being more generic and preparing for shortages or issues with all fuel supply. However, fuel supply concerns are already a part of EOP-011 and should remain in one standard only.

6. Communications for generating unit availability between the GO/GOPs and BAs/RCs already take place through normal and emergency operations. If these are included in a Cold Weather specific emergency, great care should be taken to ensure the requirements don't conflict with or further restrict what is already in other standards.

7. There is the potential for significant cost impacts should additional studies or technologies be required of entities to meet the language of the new standard. Until the language is further defined, these costs are difficult to calculate, but the potential should be considered as verbiage is crafted.

Likes 0

Dislikes 0

**Response: Thank you for your comment. After evaluating 1.e, the SAR DT also agreed that bullet 1.e was not necessary. To address assessment of generating unit availability and expectations around delivered gas, the SAR drafting team determined that 1.d and 1.a should be modified to address these areas. Also, natural gas availability and delivery was the main focus of the South Central Cold Weather Event report recommendations and not fuel oil inventory. Additionally, the SAR drafting team removed the word 'technologies' from the SAR. Lastly, the SAR drafting team will notate your other recommendations for the SDT when formed.**

**John Allen - City Utilities of Springfield, Missouri - 1,3,4**

**Answer**

**Document Name**

**Comment**

If FERC and NERC expect to have no adverse effects on the BES in the real-time operations horizon during extreme ambient conditions, then the same expectation should be placed on the planning horizons. There are numerous Reliability Standards already in place that should be assessing resource capability and availability for these extreme conditions to identify and mitigate shortages ahead of real-time. For example:

- FAC-008 and MOD-025 should ensure the GO and GOP know the capability and availability of their BES resources under various ambient conditions, including extreme cold weather. If they don't have this information or are providing false information, then that should be in scope today for the ERO.
- MOD-031 and MOD-032 should ensure the PC and BA request and receive information from each RP to know the capability and availability of BES resources in their area under various ambient conditions, including extreme cold weather. If they don't have this information or are provided false information, then that should be in scope today for the ERO.
- NERC Reliability Assessments and TPL-001 should ensure near-term/long-term planning studies only include BES resources that are known to have the capability and availability under the specified ambient conditions, including extreme cold weather/winter peak. If they are not studying these conditions or are including invalid resources, then that should be in scope today for the ERO.
- IRO-010 and TOP-003 should ensure the RC and BA request and receive information from each GO and GOP to know the capability and availability of BES resources in their area under various ambient conditions, including extreme cold weather. If they don't have this information or are provided false information, then that should be in scope today for the ERO.
- IRO-008, TOP-001 and TOP-002 should ensure the RC's and BA's Operational Planning Analysis and the RC's Real-time Assessment only includes BES resources that are known to have the capability and availability under the expected ambient conditions, including extreme cold weather/winter peak. If they are not assessing these conditions or are including invalid resources and/or Operating Plans, then that should be in scope today for the ERO.

If the ERO enforces these expectations, then it should either incentivize the GO/GOP to invest in improvements to be eligible for resource planning and BA/market dispatch (revenue) or the entities planning and operating the BES should have to acquire and dispatch other resources to maintain reliability and prevent recurrence of an event like January 17, 2018. This approach should also work in protecting the BES against other factors that impact resource capability and availability, which are becoming too frequent.

The drafting team should also be mindful of the practicality in creating more Reliability Standards that apply to nearly 1000 entities registered as GO/GOP whose primary business is to sell power to the grid. With the proliferation of renewable resources, many of those GO/GOP entities are "non-utility" companies who are operating in RTO markets solely for revenue. This will most likely be very controversial with them and take years to develop and implement. To get industry approval the end result could be a Standard with weak requirements that does little to address the issue. This could create more administrative work for the registered entities (especially those who already routinely operate in cold weather conditions) with uncertain value. The ERO will also have to initiate monitoring on all 1000 of these entities, which may be inefficient and impractical.

A more effective and efficient method would be to ensure requirements for the PC, RC and BA (whose role and responsibility is to oversee resource adequacy within an area of the BES) are sufficient to address the emerging risk of grid transformation. This proactive approach would reduce the need to continually create a project to address the next event based on other factors.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The standard referenced in your comments does not specifically address freezing issues that occur to combustion turbines, boilers and balance of plant equipment. Plant winterization plans have already been established and implemented for generating facilities located in areas/regions that experience severe cold weather conditions, but the freezing of valves, equipment, piping and instrumentation is still occurring causing failures to start, de-rates, and trips impacting the reliability of the BPS. Although it is understood that market operations incent generator availability and lack of/poor performance can result in monetary penalties, plant freezing issues continue to occur when precautions have not been taken to prevent freezing during cold weather conditions. The SAR DT will notate the standards referenced in your comments for SDT consideration when developing modifications to the appropriate standards, if warranted.**

**The SAR drafting team chose to keep the primary focus of the SAR on cold weather preparedness, which is consistent with the 2019 FERC and NERC Staff Report: the South Central United States Cold Weather Bulk Electric System Event of January 17, 2018 Recommendation One. In response to a NERC Staff recommendation, the SAR DT modified the SAR to include communication of operating limitations due to all ambient weather conditions. The basis for NERC Staff's recommendation is that communication is important for reliability as it allows RCs and BAs to be better prepared for next day studies and even hour ahead studies. It is important that entities know that a unit can be counted on based on the data provided. NERC Staff recommended including the issue in this project, rather than addressing in a subsequent project, in the interest of administrative efficiency and to avoid the burdens that could come from having multiple successive versions of a standard become effective in a short time.**

**Karie Barczak - DTE Energy - Detroit Edison Company - 3,4,5, Group Name DTE Energy - DTE Electric**

**Answer**

**Document Name**

| Comment  |  |
|--|--|
| None   |  |
| Likes 0  |  |
| Dislikes 0   |  |
| <b>Response:</b>   |  |
| Jeff Kimbell - Public Utility District No. 1 of Chelan County - 1,3,5,6, Group Name CHPD   |  |
| Answer   |  |
| Document Name  |  |
| Comment  |  |
| <p>This SAR addresses an important concern in some regions, but is so general that it will negatively impact the bulk of generators that already reliably operate in routinely cold weather regions and generation types that are not impacted fully in the same ways as the types concerned in the Events that have been analyzed over the last ten years. We design and operate our plants for cold weather. Additional regulatory requirements will divert resources from valuable work in maintaining these systems to compliance paperwork that will not improve plant or system reliability.</p> |  |
| Likes 0  |  |
| Dislikes 0   |  |
| <b>Response: Thank you for your comment. The SAR drafting team revised the SAR to provide flexibility among the geographical regions. In addition, the SAR drafting team will notate all of your recommendations for the SDT to consider when formed.</b>  |  |
| Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC   |  |
| Answer   |  |

|  |  |
|--|--|
| <b>Document Name</b>   |  |
| <b>Comment</b>   |  |
| <p>BPA suggests that the Drafting Team include a good representation of cold weather GO/GOPs, specifically, generators that are experienced with cold weather preparation and who are in a better position to assess the new documentation burden that will come with a new standard.</p>  |  |
| Likes 0  |  |
| Dislikes 0   |  |
| <p><b>Response: Thank you for your comment.</b></p>  |  |
| <p><b>Richard Jackson - U.S. Bureau of Reclamation - 1,5</b></p>   |  |
| <b>Answer</b>  |  |
| <b>Document Name</b>   |  |
| <b>Comment</b>   |  |
| <p>Reclamation recommends the SAR be reviewed by FERC or a FERC representative to ensure it encompasses the full scope of what FERC envisions for regulating cold weather preparedness. This will help to fully scope the project and avoid the churn of immediate modifications to newly approved or revised standards under this project.</p> <p>Reclamation also recommends the drafting team for this project include representatives from Canadian and northern U.S. entities and hydro generators to ensure unreasonable burdens are not created while regulating a problem that only impacts a subset of entities and generators.</p> |  |
| Likes 0  |  |
| Dislikes 0   |  |

**Response: Thank you for your comment. FERC staff is engaged with this SAR drafting team. Active observers are welcome and encouraged to participate in the drafting process of this SAR and/or subsequent Standard.**

**Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4, Group Name FE Voter**

**Answer**

**Document Name**

**Comment**

None.

Likes 0

Dislikes 0

**Response:**

**Bruce Reimer - Manitoba Hydro - 1,3,5,6**

**Answer**

**Document Name**

**Comment**

If the equipment's operational temperatures were properly specified during designs and procurements then most of issues discussed in the report should not have occurred. The cold weather related issues are more design and geographical related than of compliance.

Likes 0

Dislikes 0

**Response: The SAR drafting team appreciates your response. The SAR drafting team revised the SAR to provide flexibility among the geographical regions. In addition, the SAR drafting team will notate all of your recommendations for the SDT to consider when formed.**

|   |  |
|---|--|
| <b>Anthony Jablonski - ReliabilityFirst - 10</b>  |  |
| <b>Answer</b>   |  |
| <b>Document Name</b>  |  |
| <b>Comment</b>  |  |
| <p>ReliabilityFirst notes that the “Recommendations” section (Appendix G) of the 2019 FERC and NERC Staff Report - The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018 has a number of Recommendations as well which should be included in the SAR (some of these may already be covered SAR). They include the following:</p> <p>#6: Transmission Operators, Balancing Authorities, and Generator Owner/Operators should consider developing mechanisms to verify that units that have fuel switching capabilities can periodically demonstrate those capabilities. (I would think this should really be directed to the GO/GOPs)</p> <p>#7: Balancing Authorities, Transmission Operators and Generator Owners/Operators should take the steps necessary to ensure that black start units can be utilized during adverse weather and emergency conditions. (Blackstart Resources should always get special attention).</p> <p>#14: Generator Owner/Operators should ensure that adequate maintenance and inspection of freeze protection elements be conducted on a timely and repetitive basis.</p> <p>#15: Each Generator Owner/Operator should inspect and maintain its generating units’ heat tracing equipment.</p> <p>#16: Each Generator Owner/Operator should inspect and maintain its units’ thermal insulation.</p> <p>#17: Each Generator Owner/Operator should plan on the erection of adequate wind breaks and enclosures, where needed.</p> <p>#18: Each Generator Owner/Operator should develop and annually conduct winter-specific and plant-specific operator awareness and maintenance training.</p> |  |

#19: Each Generator Owner/Operator should take steps to ensure that winterization supplies and equipment are in place before the winter season, that adequate staffing is in place for cold weather events, and that preventative action in anticipation of such events is taken in a timely manner.

#20: Transmission Operators should ensure that transmission facilities are capable of performing during cold weather conditions.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR DT will notate your recommendations for the SDT to consider when formed. The SAR DT chose to focus the SAR on Recommendation #1 of the FERC/NERC report, which focuses on Generators, BAs, and RCs.**

**Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy**

**Answer**

**Document Name**

**Comment**

None.

Likes 0

Dislikes 0

**Response:**

**Thomas Foltz - AEP - 3,5**

**Answer**

**Document Name**

**Comment**

The proposed SAR needs to more clearly identify whether these reports and preparations are only mandatory for BES assets. If the document refers to the preparation of NG and Coal facilities to be encompassing of power generation, preparations then need to specify responsibilities related to BES renewables.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR DT will notate your recommendation for the SDT to consider when formed. The SAR DTs intent is that the standard will focus on BES assets and be applicable only to NERC Registered Entities.**

**Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6**

**Answer**

**Document Name**

**Comment**

We should target requirements for winter preparedness to those who are the problem. Creating additional administrative burdens for entities who are in northern climates and have generation that is designed to operate in severe winter weather is not in the best interest of the ratepayers.

Likes 0

Dislikes 0

**Response: Thank you for your comment. The SAR DT will notate your suggestion for the SDT to consider as they draft proposed revisions. In addition, the SAR DT revised the SAR to provide flexibility among the geographical regions. The SAR DT will notate your recommendation for the SDT for consideration once formed.**

**End of Report**