

Comment Report

Project Name: 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination | SAR
Comment Period Start Date: 11/22/2021
Comment Period End Date: 12/21/2021
Associated Ballots:

There were 54 sets of responses, including comments from approximately 152 different people from approximately 109 companies representing 10 of the Industry Segments as shown in the table on the following pages.

Questions

1. Please use the following subparts to indicate which Reliability Standards you believe should be revised to address the recommendations in the FERC/NERC Joint Inquiry report:

- a. Which Reliability Standard(s) should be revised to address the recommendation: “Generator Owners are to identify and protect cold-weather-critical components and systems for each generating unit. Cold-weather-critical components and systems are those which are susceptible to freezing or otherwise failing due to cold weather, and which could cause the unit to trip, derate, or fail to start.”

- b. Which Reliability Standard(s) should be revised to address the recommendation: “Generator Owners are to design new or retrofit existing generating units to operate to a specified ambient temperature and weather conditions (e.g., wind, freezing precipitation). The specified ambient temperature and weather conditions should be based on available extreme temperature and weather data for the generating unit’s location, and account for the effects of precipitation and accelerated cooling effect of wind.”

- c. Which Reliability Standard(s) should be revised to address the recommendation: “Generator Owners and Generator Operators are to conduct annual unit-specific cold weather preparedness plan training.”

- d. Which Reliability Standard(s) should be revised to address the recommendation: “Generator Owners that experience outages, failures to start, or derates due to freezing are to review the generating unit’s outage, failure to start, or derate and develop and implement a corrective action plan for the identified equipment, and evaluate whether the plan applies similar equipment for its other generating units.”

- e. Which Reliability Standard(s) should be revised to address the recommendation: “The Reliability Standards should be revised to provide greater specificity about the relative roles of the Generator Owners, Generator Operators and Balancing Authorities in determining the generating unit capacity that can be relied upon during “local forecasted cold weather,” which is language from the revised Reliability Standard TOP-003-5, R2.3. -Each Generator Owner/Generator Operator should be required to provide the Balancing Authority with the percentage of the total generating unit capacity that the Generator Owner/Generator Operator reasonably believes the Balancing Authority can rely upon during the “local forecasted cold weather,” including reliability risks related to natural gas fuel contracts. -Each Balancing Authority should be required to use the data provided by the Generator Owner/Generator Operator, combined with its evaluation, based on experience, to calculate the percentage of each individual generating unit’s total capacity that it can rely upon during the “local forecasted cold weather,” and share its calculation with the Reliability Coordinator. Each Balancing Authority should be required to use that calculation of the percentage of total generating capacity that it can rely upon to “prepare its analysis functions and Realtime monitoring,” and to “manag[e] generating resources in its Balancing Authority Area to address . . . fuel supply and inventory concerns” as part of its Capacity and Energy Emergency Operating Plans.”

- f. Which Reliability Standard(s) should be revised to address the recommendation: “In EOP-011-2, R7.3.2, Generator Owners are to account for the effects of precipitation and accelerated cooling effect of wind when providing temperature data.”

- g. Which Reliability Standard(s) should be revised to address the recommendation: “To protect critical natural gas infrastructure from manual and automatic load shedding in order to avoid adversely affecting bulk-power system reliability, Balancing Authorities’ and Transmission Operators’ (TOPs) provisions for operator-controlled manual load shedding are to include processes for identifying and protecting critical natural gas infrastructure loads in their respective areas from firm load shed. Critical natural gas infrastructure loads are natural gas production, processing and intrastate and interstate pipeline facility loads which, if de-energized, could adversely affect the provision of natural gas to bulk-power system natural gas-fired generation.”

h. Which Reliability Standard(s) should be revised to address the recommendation: “Balancing Authorities’ operating plans (for contingency reserves and to mitigate capacity and energy emergencies) are to prohibit use of critical natural gas infrastructure loads for demand response.”

i. Which Reliability Standard(s) should be revised to address the recommendation: “In minimizing the overlap of manual and automatic load shed, the load shed procedures of Transmission Operators, Transmission Owners (TOs) and Distribution Providers (DPs) should separate the circuits that will be used for manual load shed from circuits used for underfrequency load shed (UFLS), undervoltage load shed (UVLS) or serving critical load. UFLS/UVLS circuits should only be used for manual load shed as a last resort and for UFLS circuits, should start with the final stage (lowest frequency).”

2. Do you believe there are alternatives or more cost effective options to address the recommendations the in FERC/NERC Joint Inquiry report? If so, please provide your recommendation and, if appropriate, technical or procedural justification.

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

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
BC Hydro and Power Authority	Adrian Andreoiu	1,3,5	WECC	BC Hydro	Hootan Jarollahi	BC Hydro and Power Authority	3	WECC
					Helen Hamilton Harding	BC Hydro and Power Authority	5	WECC
					Adrian Andreoiu	BC Hydro and Power Authority	1	WECC
DTE Energy - Detroit Edison Company	Adrian Raducea	3,5		DTE Energy - DTE Electric	Karie Barczak	DTE Energy - Detroit Edison Company	3	RF
					Adrian Raducea	DTE Energy - Detroit Edison	5	RF
					patricia ireland	DTE Energy	4	RF
New York Independent System Operator	Gregory Campoli	2		ISO/RTO Standards Review Committee	Gregory Campoli	New York Independent System Operator	2	NPCC
					Helen Lainis	IESO	2	NPCC
					Michael Del Viscio	PJM	2	RF
					Charles Yeung	Southwest Power Pool, Inc. (RTO)	2	MRO
					Bobbi Welch	Midcontinent ISO, Inc.	2	RF
					Ali Miremadi	CAISO	2	WECC
					Kathleen Goodman	ISO-NE	2	NPCC
CMS Energy - Consumers Energy Company	Jeanne Kurzynowski	3,4,5	RF	Consumers Energy Company	Jeanne Kurzynowski	Consumers Energy Company	1,3,4,5	RF
					Jim Anderson	Consumers Energy Company	1	RF
					Karl Blaszkowski	Consumers Energy Company	3	RF

					Theresa Martinez	Consumers Energy Company	4	RF
					David Greyerbiehl	Consumers Energy Company	5	RF
Tacoma Public Utilities (Tacoma, WA)	Jennie Wike	1,3,4,5,6	WECC	Tacoma Power	Jennie Wike	Tacoma Public Utilities	1,3,4,5,6	WECC
					John Merrell	Tacoma Public Utilities (Tacoma, WA)	1	WECC
					Marc Donaldson	Tacoma Public Utilities (Tacoma, WA)	3	WECC
					Hien Ho	Tacoma Public Utilities (Tacoma, WA)	4	WECC
					Terry Gifford	Tacoma Public Utilities (Tacoma, WA)	6	WECC
					Ozan Ferrin	Tacoma Public Utilities (Tacoma, WA)	5	WECC
MRO	Kendra Buesgens	1,2,3,4,5,6	MRO	MRO NSRF	Bobbi Welch	Midcontinent ISO, Inc.	2	MRO
					Christopher Bills	City of Independence Power & Light	4	MRO
					Fred Meyer	Algonquin Power Co.	1	MRO
					Jamie Monette	Allete - Minnesota Power, Inc.	1	MRO
					Jodi Jensen	Western Area Power Administration - Upper Great Plains East (WAPA)	1,6	MRO
					John Chang	Manitoba Hydro	1,3,6	MRO
					Larry Heckert	Alliant Energy Corporation Services, Inc.	4	MRO

					Marc Gomez	Southwestern Power Administration	1	MRO
					Matthew Harward	Southwest Power Pool, Inc.	2	MRO
					LaTroy Brumfield	American Transmission Company, LLC	1	MRO
					Bryan Sherrow	Kansas City Board Of Public Utilities	1	MRO
					Terry Harbour	MidAmerican Energy	1,3	MRO
					Jamison Cawley	Nebraska Public Power	1,3,5	MRO
					Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					Jeremy Voll	Basin Electric Power Cooperative	1,3,5	MRO
					Joe DePoorter	Madison Gas and Electric	4	MRO
					David Heins	Omaha Public Power District	1,3,5,6	MRO
					Bill Shultz	Southern Company Generation	5	MRO
Duke Energy	Kim Thomas	1,3,5,6	FRCC,RF,SERC,Texas RE	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	1,3,4,5,6		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF
					Robert Loy	FirstEnergy - FirstEnergy Solutions	5	RF

					Tricia Bynum	FirstEnergy - FirstEnergy Corporation	6	RF
					Mark Garza	FirstEnergy-FirstEnergy	4	RF
Pacific Gas and Electric Company	Michael Johnson	1,3,5	WECC	PG&E All Segments	Marco Rios	Pacific Gas and Electric Company	1	WECC
					Sandra Ellis	Pacific Gas and Electric Company	3	WECC
					James Mearns	Pacific Gas and Electric Company	5	WECC
Southern Company - Southern Company Services, Inc.	Pamela Hunter	1,3,5,6	SERC	Southern Company	Matt Carden	Southern Company - Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
					Jim Howell	Southern Company - Southern Company Services, Inc. - Gen	5	SERC
Eversource Energy	Quintin Lee	1,3		Eversource Group	Quintin Lee	Eversource Energy	1	NPCC
					Christopher McKinnon	Eversource Energy	3	NPCC
Northeast Power Coordinating Council	Ruida Shu	1,2,3,4,5,6,7,8,9,10	NPCC	NPCC Regional Standards Committee no NGrid	Guy V. Zito	Northeast Power Coordinating Council	10	NPCC
					Randy MacDonald	New Brunswick Power	2	NPCC

Glen Smith	Energy Services	4	NPCC
Alan Adamson	New York State Reliability Council	7	NPCC
David Burke	Orange & Rockland Utilities	3	NPCC
Helen Lainis	IESO	2	NPCC
David Kiguel	Independent	7	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
Salvatore Spagnolo	New York Power Authority	1	NPCC
Shivaz Chopra	New York Power Authority	5	NPCC
Deidre Altobell	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
Cristhian Godoy	Con Ed - Consolidated Edison Co. of New York	6	NPCC
Nurul Abser	NB Power Corporation	1	NPCC

					Randy MacDonald	NB Power Corporation	2	NPCC
					Michael Ridolfino	Central Hudson Gas and Electric	1	NPCC
					Vijay Puran	NYSPS	6	NPCC
					ALAN ADAMSON	New York State Reliability Council	10	NPCC
					Sean Cavote	PSEG - Public Service Electric and Gas Co.	1	NPCC
					Brian Robinson	Utility Services	5	NPCC
					Quintin Lee	Eversource Energy	1	NPCC
					Jim Grant	NYISO	2	NPCC
					John Pearson	ISONE	2	NPCC
					Nicolas Turcotte	Hydro-Qu?bec TransEnergie	1	NPCC
					Chantal Mazza	Hydro-Quebec	2	NPCC
					Michele Tondalo	United Illuminating Co.	1	NPCC
					Paul Malozewski	Hydro One Networks, Inc.	3	NPCC
					Sean Bodkin	Dominion - Dominion Resources, Inc.	6	NPCC
Dominion - Dominion Resources, Inc.	Sean Bodkin	3,5,6		Dominion	Connie Lowe	Dominion - Dominion Resources, Inc.	3	NA - Not Applicable
					Lou Oberski	Dominion - Dominion Resources, Inc.	5	NA - Not Applicable
					Larry Nash	Dominion - Dominion Virginia Power	1	NA - Not Applicable

					Rachel Snead	Dominion - Dominion Resources, Inc.	5	NA - Not Applicable
Western Electricity Coordinating Council	Steven Rueckert	10		WECC Cold Weather SAR	Steve Rueckert	WECC	10	WECC
					Phil O'Donnell	WECC	10	WECC
					Roger Cummins	WECC	10	WECC
Santee Cooper	Tommy Curtis	1,3,5,6		Santee Cooper	Rene' Free	Santee Cooper	1,3,5,6	SERC
					Paul Camilletti	Santee Cooper	1,3,5,6	SERC
					Rodger Blakely	Santee Cooper	1,3,5,6	SERC
					LaChelle Brooks	Santee Cooper	1,3,5,6	SERC
					Jennifer Richards	Santee Cooper	1,3,5,6	SERC

1. Please use the following subparts to indicate which Reliability Standards you believe should be revised to address the recommendations in the FERC/NERC Joint Inquiry report:

a. Which Reliability Standard(s) should be revised to address the recommendation: "Generator Owners are to identify and protect cold-weather-critical components and systems for each generating unit. Cold-weather-critical components and systems are those which are susceptible to freezing or otherwise failing due to cold weather, and which could cause the unit to trip, derate, or fail to start."

Adrian Raducea - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy - DTE Electric

Answer

Document Name

Comment

New Requirements in EOP-011-2 R7 requires that each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The requirement is at unit level. **Adding component listing for cold-weather components is not necessary.**

Likes 0

Dislikes 0

Response

Susan Sosbe - Wabash Valley Power Association - 1,3

Answer

Document Name

Comment

It is our suggestion that this Requirement be added to Reliability Standard EOP-011 (Emergency Preparedness and Operations) since this Standard (most recent draft) already includes R7, requiring the Generator Owners to implement and maintain cold weather preparedness plans for its generating units. As part of this Plan, these components/systems could be identified.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

None – suggest a new NERC GO/GOP Standard to implement recommendations. It is also suggested that recently modified TOP-003-5, EOP-011-2 and IRO-010-4 standards not be modified further and consideration be given for moving Cold Weather Requirements in these Standards to the new Standard.

Likes 0

Dislikes 0

Response

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer

Document Name

Comment

The MRO NERC Standards Review Forum (NSRF) believes this recommendation would best be addressed in a **Facilities Design, Connections and Maintenance (FAC)** standard along with items 1, 3, 4, 5 and 6 (see pages 3-4 of the SAR).

If this proposal is adopted, MRO NSRF recommends the Standard Drafting Team (SDT) begin work using the corresponding language currently in EOP-011-2, Requirements R7 and R8 and then retire R7 and R8 from EOP-011-2.

In addition, MRO NSRF recommends a change to the scope of the SAR to recognize there may be components that Generator Owners will be unable to protect, such that these cold-weather-critical components could render the unit unavailable. Likewise, this unavailability should be reflected in the generating capacity that can be relied (see our response to question 1e below).

Likes 1

Tacoma Public Utilities (Tacoma, WA), 1,3,4,5,6, Wike Jennie

Dislikes 0

Response

Michael Krum - Salt River Project - 1,3,5,6 - WECC

Answer

Document Name

Comment

No Comment.

Likes 0

Dislikes 0

Response

Answer

Document Name

Comment

Reclamation identifies that cold weather maintenance does not fit well into any existing reliability standards. Annual maintenance for generator types and geographic areas that have never had a problem with cold weather represent an added regulatory burden for a problem that these generators and geographic areas do not have. Given the performance history of facilities in northern, colder climates, annual maintenance and inspection requirements would be excessive. Reclamation recommends Generator Owners follow guidance derived from manufacturer specifications and entity evaluations of policies, procedures, and maintenance.

Many types of generation equipment are already housed indoors or otherwise have no realistic chance of freezing because these conditions were considered during the design/build phase or, in the case of hydro, the units are not affected by cold weather in any way that can be controlled. For example, efforts to prevent a river from freezing, such as with the use of chemical additives or by any device that would generate enough heat over a large enough area to thaw a freezing river, would be prohibited by environmental regulations. Small hydro facilities may have difficulties with ice buildup on screens intended to prevent large debris from entering the turbines; however, there is no equipment that can be added or removed. Instead, these small facilities already have measures in place to remove ice buildup.

Any new standard must either include exemptions for facilities that are already freeze-resistant, accept working practices already in place that correct ice-related problems, or base its applicability on the historical temperature records of the applicable facilities.

Reclamation recommends a new standard be created in the FAC family to identify "cold weather critical components" and to describe the required maintenance and minimum required maintenance frequency for each component. The new standard should provide an exemption for entities with no cold weather vulnerabilities. Reclamation recommends the format of this new standard be similar to PRC-005-6 or FAC-501-WECC-3 and offers the following example:

Example:

FAC-006-1 – Maintenance for Cold Weather Critical Components.

R1. Each Generator Owner shall establish a maintenance program for its cold weather critical components.

R1.1. The maintenance program shall identify cold-weather-critical components and systems based on:

1. Historical cold weather experiences of outages, failure to start, deratings, or supply chain impacts.
2. Minimum ambient temperature and weather conditions from NOAA hourly historical database for minimum occurrence.
3. Critical fuel supplies, essential systems for energy production, critical supply chain products, or other products critical to maintain energy production.

R1.2. The maintenance program shall identify controls to minimize inherent risks and address:

1. The maintenance to be performed.
2. The periodicity to perform the maintenance.
3. Spare parts, backup systems, or redundant systems.
4. Procedure to implement preparations for extreme weather events prior to the events occurring.

R2. Each Generator Owner shall follow its maintenance program for cold weather critical components.

R3. Each Generator Owner shall design new generating units to operate to the ambient temperature and weather conditions specified in its cold weather maintenance program.

R4. Each Generator Owner that experiences an outage, failure to start, or derate due to cold weather shall review the generating unit's outage, failure to start, or derate and develop a corrective action plan for the identified equipment.

R4.1. In cases where the outage cannot be avoided and corrective action would not prevent a similar future outage (e.g., canal freezing), notify the TOP and BA of the potential loss of generation.

R5. Each Generator Owner that develops a corrective action plan pursuant to FAC-006-1 R4 shall implement its corrective action plan.

R6. Each Generator Owner that develops a corrective action plan pursuant to FAC-006-1 R4 shall evaluate whether the plan applies to similar equipment for its other generating units.

Likes 1	Enel Green Power, 5, Johnson Natalie
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Dislikes 0	
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Response

Jeanne Kurzynowski - CMS Energy - Consumers Energy Company - 3,4,5 - RF, Group Name Consumers Energy Company

Answer

Document Name

Comment

EOP and FAC standards.

Likes 0	
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Dislikes 0	
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Response

George Brown - Acciona Energy North America - 5

Answer

Document Name

Comment

Acciona Energy believes this recommendation would be best addressed in Facilities Design, Connections and Maintenance (FAC) suite of NERC Standards. Perhaps, the most appropriate place for this recommendation would be NERC Reliability Standard FAC-008 – Facility Ratings (NERC FAC-008). NERC FAC-008 already includes the majority, if not all equipment, cold-weather-critical components and systems that would be affected by extreme cold weather, which the loss of would ultimately affect the Facility Rating.

Acciona Energy recommends that the Standards Drafting Team adopt and then retire the applicable language from NERC Reliability Standard EOP-011-2 Emergency Preparedness and Operations, Requirement R7 and R8.

Likes 1

Tacoma Public Utilities (Tacoma, WA), 1,3,4,5,6, Wike Jennie

Dislikes 0

Response

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

Answer

Document Name

Comment

Xcel Energy supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Alliant Energy supports the comments submitted by the MRO NSRF.

Likes 0

Dislikes 0

Response

Keith Jonassen - ISO New England, Inc. - 2 - NPCC

Answer

Document Name

Comment

Recommend revising EOP-011 and IRO-010 and create a new defined term(s)

- Add new requirement to EOP-011:

- Each Generator Owner shall identify and protect **cold-weather-critical components and systems** for each generating unit.
- Create new defined term: **Cold-weather-critical components and systems** are those which are susceptible to freezing or otherwise failing due to cold weather and which could cause the generating unit to trip, derate, or fail to start.
- Revise IRO-010, R1.3 as shown below (revisions in red):
 - 1.3 Provisions for notification of BES generating unit(s) operating limitations during local forecasted cold and extreme weather conditions to include:
 - 1.3.x Cold-weather-critical components and systems

Likes 0

Dislikes 0

Response

Sean Bodkin - Dominion - Dominion Resources, Inc. - 3,5,6, Group Name Dominion

Answer

Document Name

Comment

Dominion Energy supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

Carl Pineault - Hydro-Quebec Production - 1,5

Answer

Document Name

Comment

No comments

Likes 0

Dislikes 0

Response

Kenisha Webber - Entergy - Entergy Services, Inc. - NA - Not Applicable - SERC

Answer

Document Name

Comment

EOP-011-2, Requirement R7 as part of Cold Weather plan

Likes 0

Dislikes 0

Response

Jennie Wike - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6 - WECC, Group Name Tacoma Power

Answer**Document Name****Comment**

Tacoma Power does not support adding facility design, analysis or maintenance requirements to EOP Standards. This recommendation should be incorporated into FAC-008 R2.2. FAC-008 R2.2.3 currently captures evaluating Equipment Ratings for ambient conditions and could be expanded to include extreme cold weather events. An example of how this could be addressed in FAC-008 R2.2:

R2.2. The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R2, Part 2.1 including identification of how each of the following were considered:

R2.2.1. Equipment Rating standard(s) used in development of this methodology.

R2.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.

R2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).

R2.2.4. Operating limitations.

R2.2.5 Protection against extreme cold weather events

Likes 0

Dislikes 0

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter

Answer**Document Name****Comment**

FirstEnergy supports comments posted by EEI

Likes 0

Dislikes 0

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5,6

Answer

Document Name

Comment

NRG Energy Inc. believes that the recommendation should be included as part of a new standard dedicated to Cold Weather.

Likes 0

Dislikes 0

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer

Document Name

Comment

Texas RE recommends adding this Key Recommendation to EOP-011, since EOP-011-2 Requirement R7 includes implementing and maintaining cold weather preparedness plans. This recommendation would add additional parts of what is needed in the plan.

Alternatively, a new Emergency Preparedness and Operations standard could be created to include the following Key Recommendations from the FERC-NERC-Regional Entity Staff Report: The February 2021 Cold Weather Outages in Texas and South Central United States (Joint Inquiry): 1a, 1c,1d, 1e, and 1f. Language from future enforceable EOP-011-2 Requirements R7 and R8 could also be included in this new Emergency Preparedness and Operations standard.

Texas RE notes that in order to fully implement the Joint Inquiry recommendations, the SDT should consider the impact of extreme weather preparation requirements on the full suite of NERC Reliability Standards. Based on this principle, Texas RE also recommends the SDT consider the following additional changes:

- Revising TOP-003 and IRO-010, as in Project 2019-06, to include provisions for notifying the TOP and RC of data necessary to perform the Operational Planning Analyses, Real-time monitoring, and Real-time Assessments;

- Consider revising the EOP-004 attachment 1 to include a new event type of Critical loss due to cold weather;
- Consider revising Table 1 in TPL-001 to include cold weather;
- Consider whether cold weather should be included in the RC's SOL Methodology in accordance with proposed Reliability Standard FAC-011-4;
- Consider adding weather as a "steady-state" to Attachment 1 of MOD-032;
- Consider whether identifying critical elements should be included as part of CIP-002 for identifying high, medium, and low impact BES Cyber Systems; and
- Consider adding the term "critical elements" to the NERC Glossary as defined in the FERC Report in its execution of recommendations 1a-1g in order to provide consistency and clarity.

Likes 0

Dislikes 0

Response

Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,3,5

Answer

Document Name

Comment

Reliability Standard EOP-011-2

Likes 0

Dislikes 0

Response

Michael Johnson - Pacific Gas and Electric Company - 1,3,5 - WECC, Group Name PG&E All Segments

Answer

Document Name

Comment

PG&E has participated in the preparation and supports the comments provided by the Edison Electric Institute (EEI) for Q1a.

Likes 0

Dislikes 0

Response

Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro

Answer

Document Name

Comment

This recommendation aligns with Requirements R7 and R8 of EOP-011-2.

BC Hydro recommends that a new EOP Standard(s) focusing on cold weather preparedness be developed to address this recommendation and the Requirements R7 and R8 be moved from EOP-011-2 to the new Standard in the EOP family.

Likes 0

Dislikes 0

Response

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

Answer**Document Name****Comment**

The FERC, NERC and Regional Entity Staff Report on recent cold weather outages includes numerous recommendations for ensuring the reliability of the Bulk Electric System through potential revisions to NERC Reliability Standards and by other means. Southern Company looks forward to engaging these topics within NERC's stakeholder process. In this regard, we would like to express our general support of EEL's comments in response to the proposed Standards Authorization Request for Project 2021-07, Extreme Cold Weather Grid Operations, Preparedness, and Coordination. Southern Company offers the following remarks for consideration by the project's Standard Authorization Request Drafting Team once established.

Southern Company believes the best location for all cold weather-related standards and requirements would be in a **new** standard dedicated solely to cold weather requirements. The existing related requirements of reliability standards EOP-011-2 (R7 & R8), TOP-003-5 (R1.3 & R2.3), and IRO-010-4 (R1.3) can be included in the new standard at a future revision date. This would ensure all requirements remain in effect continuously.

Likes 0

Dislikes 0

Response

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

Answer**Document Name****Comment**

EOP-011

Likes 0

Dislikes 0

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO

Answer

Document Name

Comment

MPC supports comments submitted by the MRO NERC Standards Review Forum (NSRF).

Likes 0

Dislikes 0

Response

Rebecca Baldwin - Transmission Access Policy Study Group - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

TAPS does not take a position regarding which standard is the appropriate home for the proposed new GO/GOP requirements, but we urge the SDT to consolidate the proposed GO/GOP requirements in a single standard to the extent possible, for ease of reference.

Likes 1

Platte River Power Authority, 5, Archie Tyson

Dislikes 0

Response

Alan Kloster - Eergy - 1,3,5,6 - MRO

Answer

Document Name

Comment

Eergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 1a.

Likes 0

Dislikes 0

Response

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5

Answer	
Document Name	
Comment	
We recommend this be added to EOP-011.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	
Document Name	
Comment	
<p>GENERAL COMMENTS: EEI appreciates the efforts by FERC, NERC, and Regional Entity Staff in the development of the February 2021 Cold Weather Outages in Texas and the South-Central US report dated November 2021. EEI member companies share the desire to better address and respond to extreme cold weather. The manner and process required to achieve these goals is complex, requiring multiple tools if this effort is to be fully effective. In our comments to the SAR, we have focused on what can be addressed through NERC Reliability Standards. We also offer the following observations that should be addressed to avoid unintended and possibly harmful consequences to grid reliability.</p> <ul style="list-style-type: none"> • Generating resources are designed for operation within certain design specifications to meet and achieve certain defined grid applications. For example, generating resources designed to provide peak output during hot weather conditions will likely be limited when operating during extreme cold weather conditions. It is also likely that modifications to these resources to meet extreme cold weather conditions may create the need to derate the resource during hot weather conditions, creating different reliability issues. In short, whether a generating resource was designed for optimal use during hot or cold conditions has a bearing on whether additional reliability requirements might be beneficial or detrimental to the resource's overall performance. • This SAR also proposes to require Generator Owners (GOs) to make modifications to their resources that would result in potentially extending their operating specification beyond their original design. This type of change also needs careful consideration vis-à-vis a NERC Reliability Standard and could impose requirements that are impractical and may go beyond what is allowed by law under the Federal Power Act. • Responsible entities support protecting critical natural gas facilities from inadvertent load shedding. However, the information needed to identify whether a gas facility is critical understandably resides with the gas facility owners and not with the entities NERC regulates, thus modifications to NERC Reliability Standards for this purpose could be ineffectual if the gas facility owners do not provide this information. <p>EEI COMMENT to Question 1a:</p> <p>While EOP-011-2 could be modified to include the expanded emergency preparedness recommendations contained in this recommendation, the consolidation of the GO/GOP specific extreme cold weather requirements into a single new Reliability Standard, including those developed under NERC Project 2019-06, would provide considerable efficiencies for industry and this project.</p>	
Likes 1	Platte River Power Authority, 5, Archie Tyson
Dislikes 0	
Response	

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3

Answer

Document Name

Comment

MidAmerican Energy Company supports EEI and MRO NSRF comments

Likes 0

Dislikes 0

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer

Document Name

Comment

The NAGF believes that the recommendation should be included as part of a new standard dedicated to Cold Weather.

Likes 0

Dislikes 0

Response

LaKenya VanNorman - Florida Municipal Power Agency - 3,4,5,6 - SERC

Answer

Document Name

Comment

FMPA supports TAPS (Transmission Access Policy Study Group) comments

Likes 0

Dislikes 0

Response

Michele Mihelic - American Clean Power Association - NA - Not Applicable - NA - Not Applicable

Answer	
Document Name	
Comment	
<p>The American Clean Power Association (ACP), the national trade association uniting developers/owners/operators of utility scale wind, solar, storage, and transmission facilities along with allied manufacturers, construction firms, service providers, legal/financial/consulting firms and others, recommends that the most appropriate NERC Standard to address the recommendation to identify and protect cold-weather critical components would be in the Facilities Design, Connections, and Maintenance (FAC) suite. Critical components can be best addressed in this type of standard with a static design number approach.</p> <p>ACP is also concerned about the use of the term 'protect' in this recommendation. Some of the examples provided (footnote 261) in the Joint Inquiry report for cold-weather-critical components cannot be "protected" against certain cold weather ambient conditions. Therefore, ACP suggests a language change to the SAR from "protect" to "protect or if unable to protect, if near-term conditions are predicted to be met that would render this cold-weather-critical component unavailable, such unavailability of this cold-weather-critical component shall be reflected in the generating capacity that can be relied on." Exceptions should be made for components that are not able to be protected.</p>	
Likes 2	Mat Bunch, N/A, Bunch Mat; Enel Green Power, 5, Johnson Natalie
Dislikes 0	
Response	
Jamie Monette - Allele - Minnesota Power, Inc. - 1	
Answer	
Document Name	
Comment	
<p>Minnesota Power agrees with MRO's NERC Standards Review Forum (NSRF) comments.</p>	
Likes 0	
Dislikes 0	
Response	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	
Document Name	
Comment	
<p>BPA supports the comments made by the US Bureau of Reclamation.</p>	
Likes 0	

Dislikes 0

Response

Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee

Answer

Document Name

Comment

The ISO/RTO Council (IRC) Standards Review Committee (SRC) believes this recommendation would best be addressed in a **Facilities Design, Connections and Maintenance (FAC)** standard along with items 1, 3, 4, 5 and 6 (see pages 3-4 of the SAR).

If this proposal is adopted, IRC SRC recommends the Standard Drafting Team (SDT) begin work using the corresponding language currently in EOP-011-2, Requirements R7 and R8 and then retire R7 and R8 from EOP-011-2.

In addition, IRC SRC recommends a change to the scope of the SAR to recognize there may be components that Generator Owners will be unable to protect, such that these cold-weather-critical components could render the unit unavailable. This unavailability should be reflected in the generating capacity provided to the BA as that can be relied upon (see our response to question 1e below).

Likes 0

Dislikes 0

Response

Travis Fisher - Electricity Consumers Resource Council (ELCON) - 7

Answer

Document Name

Comment

As Generator Owners identify and develop a plan to protect cold-weather-critical components and systems, we recommend they estimate the cost of any proposed protection (or of several protection options). NERC and FERC should understand the cost of protections before the protection activities become mandatory.

Likes 0

Dislikes 0

Response

Natalie Johnson - Enel Green Power - 5

Answer	
Document Name	
Comment	
<p>Enel North America, Inc. believes that the recommendation to identify and protect cold-weather-critical components is best addressed in the FAC-008 (Facilities Ratings) standard. Enel North America, Inc. believes that the scope of NERC FAC-008 – Facility Ratings (NERC FAC-008) addresses equipment limitations for both normal and emergency operation in winter and summer, and this is suitable to address cold-weather-critical components and systems that would be affected by extreme cold weather.</p> <p>The protection of these critical components can be included in EOP-011 or are implied with the limitations listed in FAC-008. Alternatively, this can be addressed in the Facilities Design and Maintenance suite of standards. However, the most important thing for Enel North America, Inc. is that these requirements are not dispersed across a few different standards. This may therefore necessitate a separate standard within the Facilities Design and Maintenance suite. Regarding the recommendation to protect cold-weather-critical components, Enel North America, Inc. agrees with MRO that the scope of the SAR must recognize that there may be some components that are unable to be protected in all scenarios.</p> <p>Critical components can be best addressed in this type of standard that involves static design numbers.</p>	
Likes 0	
Dislikes 0	
Response	
Daniel Gacek - Exelon - 1,3,5,6	
Answer	
Document Name	
Comment	
<p>Exelon concurs with the comments submitted by the EEI for this question. Additionally, should this drafting team decide to create new standard(s) specific to extreme cold weather, the SAR should allow the drafting team to move the FERC-approved requirements created by Project 2019-06 Cold Weather into the new comprehensive standard(s).</p>	
Likes 0	
Dislikes 0	
Response	
Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	
Document Name	
Comment	

AZPS agrees with the comments provided by EEI; EOP-011-2 could be modified to include this recommendation or may be added as a stand alone standard.

Likes 0

Dislikes 0

Response

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer

Document Name

Comment

EOP-011-2 (effective 4/1/2023) includes a new Requirement R7 that is applicable to the Generator Owner. R7, part 7.1 states that a Generator Owner's cold weather preparedness plan(s) shall include "Generating unit(s) freeze protection measures based on geographical location and plant configuration". R7, part 7.2 states that a Generator Owner's cold weather preparedness plan(s) shall include "Annual inspection and maintenance of generating unit(s) freeze protection measures". If these sub-parts of R7 do not sufficiently address this FERC/NERC Joint Inquiry report recommendation, EOP-011-2 could be revised to address it.

Likes 0

Dislikes 0

Response

b. Which Reliability Standard(s) should be revised to address the recommendation: “Generator Owners are to design new or retrofit existing generating units to operate to a specified ambient temperature and weather conditions (e.g., wind, freezing precipitation). The specified ambient temperature and weather conditions should be based on available extreme temperature and weather data for the generating unit’s location, and account for the effects of precipitation and accelerated cooling effect of wind.”

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer

Document Name

Comment

EOP-011-2 (effective 4/1/2023) includes a new Requirement R7 that is applicable to the Generator Owner. R7 requires Generator Owners to “implement and maintain one or more cold weather preparedness plan(s) for its generating units”, and lists the topics that must be addressed in the plan(s) at a minimum. This FERC/NERC Joint Inquiry report recommendation could possibly be addressed by revising EOP-011-2 to add another Generator Owner requirement.

Likes 0

Dislikes 0

Response

Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6

Answer

Document Name

Comment

AZPS agrees with the comments provided by EEI; recommending that the words “design” and “retrofit” be deleted and replaced with “specify”.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Exelon concurs with the comments submitted by the EEI for this question.

Likes 0

Dislikes 0

Response

Natalie Johnson - Enel Green Power - 5

Answer

Document Name

Comment

Enel North America, Inc. does not believe that this recommendation should be addressed within the NERC Reliability Standards. Each plant, geographic location, and transmission system is different and an attempt to try and develop one Reliability Standard for generating unit design is not the most efficient approach to increasing system reliability during extreme temperature and cold weather events. For example, for some wind generators there is not an infinite operable temperature band, meaning that if they are designed to operate at very high temperatures, they may not be able to operate at very, very low temperatures, and vice versa. Depending on the geographic location of the wind generator, the ambient weather conditions on peak load days, and whether it is located on a summer or winter peaking system, the ability to operate in extreme high temperatures may bring more reliability benefit to the system than the ability to operate under very, very low and infrequent temperatures. Further, the accuracy and availability of historic extreme weather data varies drastically across the country and a standard tied to this type of data would result in dramatically different impacts and outcomes even for generators in the same region.

Should this recommendation remain in the SAR, Enel North America, Inc. is concerned that the current language does not contain sufficient technical details, thus further research (by NERC Technical Committee(s) or other technical groups is necessary) for the industry to properly implement this recommendation across different regions, generation types, and transmission systems. It is difficult to make an assessment on operating to a certain ambient temperature and weather conditions without sufficient detail on what those temperature and weather thresholds might be. Additional definition and criteria on how these operating benchmarks will be derived still needs to be provided. Weather conditions take into account a wide range of circumstances, even within a limited geographic location; therefore, these specifications need to be clearly defined so that the industry has clear guidance. Enel North America, Inc. recommends, as a possible solution, to use a probability-based approach that takes into consideration the frequency that the lowest or highest recorded temperature occurs.

In addition, for existing sites, Enel North America, Inc. believes that in some circumstances grandfathering or exception clauses should be considered (including, but not limited to):

- Wind turbines that are built with structural steel or major components that are not rated for lower ambient temperatures. Compliance for these types of wind units would require a complete rebuild of the wind generator from scratch. In some cases (as is discussed further below), without guaranteed compensation to cover the retrofit of existing assets, the assets may exit the market altogether. This would have the opposite effect of ensuring robust supply of generation for reliability during extreme events.
- Updates to wind turbines that would trigger a complete re-study of the Balance of Plant to accommodate different operating temperatures or design limits. The design of a facility is based on certain turbine fundamentals, and any changes could cause misalignment within the facility design. These types of changes could impact generator performance, real and reactive capabilities, system modelling, and equipment functionality thereby requiring a variety of studies to be redone.
- Updates that would void original equipment manufacturer warranties. Due to the fact that the bulk of the existing wind fleet is relatively new, most units are still under warranty, and warranties are an important part of the way units are operated and maintained.

For the aforementioned reasons, Enel North America, Inc. is concerned with a one-size-fits-all approach and believes that a mechanism to consider special circumstances and exceptions should be further address and clarified.

Lastly, Enel North America, Inc. reiterates that this recommendation is not appropriate for NERC Reliability Standards due to the potentially significant and unpredictable costs of retrofits and the broader impact this could have both on electricity markets and grid reliability, given that generators potentially would be taken offline for months to re-build wind sites. FERC, States, ISO/RTOs, and other utility regulators are better positioned to evaluate the costs and benefits of retrofits for their regions and customers. Enel North America, Inc. recommends that regulators be required to provide

compensation for Generator Owner investments for any retrofits. Generator Owners cannot commit to the significant capital investment that is likely to be involved without certainty that Generator Owners will be compensated and a clear mechanism on how this will be achieved.

Likes 0

Dislikes 0

Response

Travis Fisher - Electricity Consumers Resource Council (ELCON) - 7

Answer

Document Name

Comment

Applying mandatory standards to new builds would be less invasive than asking all existing generators to retrofit to specified weather conditions. ELCON suggests a tiered approach in which NERC could develop new designs for generators that can operate to a specified ambient temperature and weather conditions while exploring the feasibility and cost of applying those new operating requirements to existing generators. Disparate treatment of new and existing assets is common in federal regulation. For example, the Environmental Protection Agency treats existing generation units differently from new units under the Clean Air Act, and the National Highway Traffic Safety Administration treats newer model vehicles differently from existing vehicles when considering fuel economy standards. The same approach makes sense here given the enormous challenge of retrofitting the entire existing generation fleet of a large portion of the United States.

Likes 0

Dislikes 0

Response

Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee

Answer

Document Name

Comment

The IRC SRC strongly supports the spirit and intent of this requirement and believes that this aspect must be addressed in order to achieve the reliability improvements necessary to avoid the bad outcomes experienced as a result of Winter Storm Uri.

That said, it is our understanding the industry has concerns with the “design and retrofit” aspects of this recommendation, as written, and that these aspects may fall outside the scope of what NERC Reliability Standard(s) are authorized to address and may be more appropriately addressed at FERC as terms under Generator Interconnection Agreements (GIA).

If that is the case, the IRC SRC asks that NERC do the following:

1. Work with FERC to ensure that action is taken to address this recommendation in the appropriate forum .

2. Determine how NERC Reliability Standard(s) would address the balance of this requirement; i.e. to account for the effects of precipitation and accelerated cooling effect of wind on generator unit operation as these aspects are not currently included in EOP-011-2, Requirements R7 and R8.

Likes 0

Dislikes 0

Response

Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC

Answer

Document Name

Comment

BPA supports the comments made by the US Bureau of Reclamation.

Likes 0

Dislikes 0

Response

Jamie Monette - Allete - Minnesota Power, Inc. - 1

Answer

Document Name

Comment

Minnesota Power agrees with MRO's NERC Standards Review Forum (NSRF) comments.

Likes 0

Dislikes 0

Response

Michele Mihelic - American Clean Power Association - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

ACP echoes comments filed by the Midwest Reliability Organization NERC Standards Review Forum (MRO NSRF) and others raising concerns about this recommendation. ACP does not believe this recommendation should be pursued at this time and it should be removed from the standard

authorization request (SAR). There is insufficient information and data to inform how to address and effectively implement this recommendation. And, there are implications beyond NERC reliability standards, including with respect to the ability of states to achieve their clean energy goals and regarding compensation for retrofits, which necessitates engagement with a broader universe of stakeholders than those involved in NERC reliability standards. As an interim step, ACP recommends that more detailed information, analysis, and data be developed to better define this approach, along with analysis on the feasibility of retrofits, commercial availability of retrofit options, cost, timeline to implement, potential for generator downtime to install, implications on design parameters for existing facilities etc. so at some point in the future, stakeholders can make a more informed decision on whether and how to approach this recommendation. For example, what are the specific temperatures and weather conditions that need to be considered? How frequently do they occur? How consistent is the data quality across regions? How do they differ by region and by area within a region? Are there any technologically feasible, proven, and commercially available retrofit options? If so, what is the availability of materials, staff etc. to carry out the work? To the extent there are not, what are the barriers? What would be the generator downtime to retrofit? Would generators be at risk of retirement if retrofitting is not economic and, if so, what are the impacts to reliability?

In addition, consideration needs to be given to the operating and design parameters of generators. For example, in some cases and in certain environments a wind turbine that is optimized to operate at extremely high temperatures, may not be able to also be optimized to operate at extremely low temperatures. In such situations, it makes sense to keep the focus on higher temperatures as the generators provide more reliability value than they might in designing them to respond to infrequent and/or historically low temperatures and icing conditions.

With respect to new builds, given that each power plant, geographic location, and transmission system is different, ACP recommends that the needed generator attributes can be best addressed through the Interconnection Agreement and Studies Process where all involved parties can take into consideration systems needs and generator capabilities on a case-by-case basis.

To the extent this recommendation remains in the SAR despite ACP and others recommendation to remove it, ACP requests that exceptions, or at a minimum sufficient grandfathering provisions, be provided from the requirement to retrofit in situations in which a retrofit:

1. Is not technically feasible, proven and commercially available.
2. Would require operating equipment outside its design parameters, which raises potential conflicts with warranties, safety, and regulatory requirements.

Likes 2	Mat Bunch, N/A, Bunch Mat; Enel Green Power, 5, Johnson Natalie
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Dislikes 0	
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Response

LaKenya VanNorman - Florida Municipal Power Agency - 3,4,5,6 - SERC

Answer	
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Document Name	
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Comment

FMPA supports TAPS (Transmission Access Policy Study Group) comments

Likes 0	
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Dislikes 0	
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Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer	
Document Name	
Comment	
The NAGF believes that the recommendation should be included as part of a new standard dedicated to Cold Weather.	
Likes 0	
Dislikes 0	
Response	
Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3	
Answer	
Document Name	
Comment	
MidAmerican Energy Company supports EEI and MRO NSRF comments	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	
Document Name	
Comment	
<p>EEI members are fully committed to ensuring that they are able to reliably operate during extreme cold weather conditions. Changes to a NERC Reliability Standards must be done within the bounds of FPA Section 215, and therefore, it is a question of law whether a NERC Reliability Standard can require GOs to retrofit existing generating resources to operate beyond their original plant design specifications. Additionally, it is a question of law whether the Federal Power Act prohibits the ERO or FERC from compelling the design of new generation. That said, GOs are already required to identify the known operating capabilities of their resources during cold weather conditions (see EOP-011-2) and provide that information during forecasted cold weather to responsible Reliability Coordinator (see IRO-010-4) and the Transmission Operator and Balancing Authority (see TOP-003-5) so that an adequate level of reliability can be maintained.</p> <p>EEI suggests modifying the SAR as follows:</p> <p>Generator Owners are required to identify and operate their generating units to the capabilities of their resources and provide that information to responsible Reliability Coordinators, Balancing Authorities, and Transmission Operators so that an adequate level of reliability can be maintained. This</p>	

projected capability shall be based on the facility's design, past performance under similar weather conditions and accounting for the effects of precipitation and accelerated cooling effect of wind.

Obligating resource owners to make certain modifications to their resources that were not conveyed, anticipated, or agreed to prior to the design, construction, or commissioning of the resource could have unintended consequences that could impact BES reliability. As an example, wind turbines that were installed without de-icing technology, when originally built, may not be practically retrofitted in all cases. Relative to traditional synchronous resources built for operation in warmer climates, these resources are often designed for peak capacity during very hot weather conditions. To achieve this capability, these resources are often built in a manner that intentionally exposes operating components to provide greater capacity during extreme hot weather conditions. Obligating those resource owners to enclose those units/components in favor of operating conditions they were not intended to reliably operate could have negative consequences for grid reliability.

Likes 1	Platte River Power Authority, 5, Archie Tyson
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Dislikes 0	
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Response

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5

Answer	
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Document Name	
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Comment	
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We do not think this requirement would fit into any existing standards. However, we do not agree that a new standard is appropriate for this recommendation, as it appears to go beyond FERC's authority and would instead be the GOs business decision. A possible alternative would be to require GOs to consider XX years of historical data when creating the design for a new BES generating plant.

Likes 0	
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Dislikes 0	
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Response

Alan Kloster - Evergy - 1,3,5,6 - MRO

Answer	
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Document Name	
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Comment	
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Evergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 1b.

Likes 0	
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Dislikes 0	
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Response

Rebecca Baldwin - Transmission Access Policy Study Group - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

TAPS does not take a position regarding which standard is the appropriate home for the proposed new GO/GOP requirements, but we urge the SDT to consolidate the proposed GO/GOP requirements in a single standard to the extent possible, for ease of reference.

Likes 0

Dislikes 0

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO

Answer

Document Name

Comment

MPC supports comments submitted by the MRO NERC Standards Review Forum (NSRF).

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

EOP-011

Likes 0

Dislikes 0

Response

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

Answer

Document Name	
Comment	
<p>The appropriate standard for such a requirement should be in a new standard dedicated solely to cold weather requirements as previously mentioned in Southern Company's response to Question 1a.</p> <p>Southern Company agrees that generating facilities should have the capability to operate at reasonable expected weather conditions for their location and communicate their capability to the Balancing Authority in a timely manner. However, Southern Company is concerned that the requirement for retrofitting <i>"existing generating units to operate to a specified ambient temperature and weather conditions (e.g., wind, freezing precipitation)"</i> has the potential to unduly burden the economics for some existing generating facilities and could cause the retirement of those facilities that would be impacted by the requirement. Additionally, retrofitting some existing generating facilities in excess of their original design criteria could be technically challenging and cost prohibitive.</p>	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	
Document Name	
Comment	
<p>This recommendation aligns with Requirements R7 and R8 of EOP-011-2.</p> <p>BC Hydro recommends that a new EOP Standard(s) focusing on cold weather preparedness be developed to address this recommendation and the Requirements R7 and R8 be moved from EOP-011-2 to the new Standard(s).</p>	
Likes 0	
Dislikes 0	
Response	
Michael Johnson - Pacific Gas and Electric Company - 1,3,5 - WECC, Group Name PG&E All Segments	
Answer	
Document Name	
Comment	
<p>PG&E has participated in the preparation and supports the comments provided by the Edison Electric Institute (EEI) for Q1b.</p>	

PG&E is also providing the additional input related to Q1b - PG&E is fully committed to the reliable operation of generating resources during cold weather events. PG&E would like to take this opportunity to reiterate the EEI comment requiring Generator Owners to design new or retrofit existing generating units to operate at a specified ambient temperature and weather conditions. Obligating generator owners to implement design changes to new resources and to retrofit existing generators should be closely evaluated to ensure that this action complies with the bounds of the Federal Power Act section 215.

Likes 0

Dislikes 0

Response

Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,3,5

Answer

Document Name

Comment

Reliability Standard EOP-011-2

Likes 0

Dislikes 0

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer

Document Name

Comment

Texas RE suggests this Key Recommendation could work in EOP-011, as EOP-011-2 Requirement Part 7.3.2 already indicates generating units' cold weather data should include a minimum design temperature. Requirement R7 could be revised to be more specific as recommended in the Key Recommendations from the FERC Report.

Alternatively, a new Emergency Preparedness and Operations standard could be created to include the following Key Recommendations from the Joint Inquiry: 1a, 1c, 1d, 1e, and 1f. Language from future enforceable EOP-011-2 Requirements R7 and R8 could also be included in this new Emergency Preparedness and Operations standard.

Additionally, Texas RE recommends the drafting team consider defining thresholds for ambient temperature and weather conditions, specifically for temperature, precipitation, and wind conditions. Texas RE further recommends that when that threshold of ambient temperature and weather conditions for extreme weather, specifically including precipitation and wind, are forecasted, GOPs with unstaffed units should have the unit staffed 24/7

until the freezing temperatures and precipitation end. This would ensure that the BA and TOP are notified of actual site conditions that could affect unit capacity prior to any actual derate, which would allow BA emergency operations to commence quicker.

Texas RE also recommends the following:

- Revising TOP-003 and IRO-010, as in Project 2019-06, to include provisions for notifying the TOP and RC of data necessary to perform the Operational Planning Analyses, Real-time monitoring, and Real-time Assessments;
- Consider revising the EOP-004 attachment 1 to include a new event type of Critical loss due to cold weather;
- Consider revising Table 1 in TPL-001 to include cold weather;
- Consider whether cold weather should be included in the RC's SOL Methodology in accordance with proposed Reliability Standard FAC-011-4;
- Consider adding weather as a "steady-state" to Attachment 1 of MOD-032;
- Consider whether identifying critical elements should be included as part of CIP-002 for identifying high, medium, and low impact BES Cyber Systems; and
- Consider adding the term "critical elements" to the NERC Glossary as defined in the FERC Report in its execution of recommendations 1a-1g in order to provide consistency and clarity.

Likes 0

Dislikes 0

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5,6

Answer

Document Name

Comment

NRG Energy Inc. believes that the recommendation should be included as part of a new standard dedicated to Cold Weather.

Likes 0

Dislikes 0

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter

Answer

Document Name

Comment

FirstEnergy supports comments posted by EEI

Likes 0

Dislikes 0

Response

Jennie Wike - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6 - WECC, Group Name Tacoma Power

Answer

Document Name

Comment

Instead of prescribing specific retrofits or upgrades, Tacoma Power recommends performing a three tier risk-based approach: perform a vulnerability assessment to identify risks, develop actions to mitigate these risks, and then implement the actions. This approach would be similar to how the industry addressed GMD events in Project 2013-03.

FAC-008 and MOD-025 currently ensure that the GO and GOP know the capability and availability of their BES resources under diverse ambient conditions. Either of these Standards could be modified to include a tiered risk-based approach that would ensure facilities are rated or designed for extreme cold weather. For example, these Requirements could look like the following:

“RX. Generator Owners shall complete a benchmark Cold Weather Vulnerability Assessment at least once every 60 calendar months. [Violation Risk Factor: High] [Time Horizon: Long-term Planning]

RY. Generator Owners shall communicate to their respective Generator Operators and Transmission Planner any vulnerabilities identified in RX that could negatively impact applicable generation facility ratings, capacity, or availability. [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]

RZ. Generator Owners that conclude through the Cold Weather Vulnerability Assessment conducted in Requirement RX that their generation facility has vulnerabilities that could impact generator output and availability during these conditions, shall develop a Corrective Action Plan (CAP) addressing how the vulnerabilities are mitigated. The CAP shall: [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]

RZ.1 Be developed within one year of completion of the Cold Weather Vulnerability Assessment.

RZ.2 Include necessary maintenance activities, cold weather preparation plans, and freeze protection methods.”

Likes 0

Dislikes 0

Response

Kenisha Webber - Entergy - Entergy Services, Inc. - NA - Not Applicable - SERC

Answer

Document Name

Comment

EOP-011-2, Requirement R7 as part of Cold Weather plan

Likes 0

Dislikes 0

Response

Michael DePalma - Onward Energy - NA - Not Applicable - MRO,WECC,Texas RE,NPCC

Answer

Document Name

Comment

There is a question on how “ specified ambient temperature and weather conditions” is determined? Sites are designed to specific weather conditions already. For Generator Owners to design new or retrofit existing generating units to operate in anything other than what they were originally designed could cost millions of dollars per site. This would make more sense for a revised Standard to read “Sites' freeze protection shall be kept functional with original design criteria for winter operations”.

Likes 0

Dislikes 0

Response

Carl Pineault - Hydro-Qu?bec Production - 1,5

Answer

Document Name

Comment

No comments

Likes 0

Dislikes 0

Response

Sean Bodkin - Dominion - Dominion Resources, Inc. - 3,5,6, Group Name Dominion

Answer

Document Name

Comment

Dominion Energy supports the comments submitted by EEI and is firmly of the opinion that equipment design specifications are not appropriate for a results based reliability standard and are not supported by both the Federal Power Act and FERC Order 672, paragraph 260.

Likes 0

Dislikes 0

Response

Keith Jonassen - ISO New England, Inc. - 2 - NPCC

Answer

Document Name

Comment

Recommend revising EOP-011 and create a new defined term

- Add new requirement to EOP-011:
 - Each Generator Owner shall design new or ensure existing generating units operate to a specified ambient temperature and weather conditions which should be based on available extreme temperature and weather data for the generating unit's location and should account for the effects of precipitation and cooling effect of wind.
- Create new defined term: **Extreme Weather** is temperatures at or exceeding the lowest (or highest) recorded temperature at the generator's physical location (or nearest location where temperature was recorded for which data exists) for a sustained period greater than or equal to one day.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Alliant Energy supports the comments submitted by the MRO NSRF.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Xcel Energy supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

George Brown - Acciona Energy North America - 5

Answer

Document Name

Comment

Acciona Energy does not believe this recommendation, as written, can or should be addressed in a NERC Reliability Standard(s) at this time. Specific information, data and details needs to be studied and provided to allow industry to either make proposals on appropriate areas to address this recommendation or develop requirements that meet reliability principles, market principles and are results-based for this recommendation.

Likes 0

Dislikes 0

Response

Jeanne Kurzynowski - CMS Energy - Consumers Energy Company - 3,4,5 - RF, Group Name Consumers Energy Company

Answer

Document Name

Comment

FAC-008-5, and possibly other FAC standards. Modify or create new.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Reclamation does not support a requirement to retrofit existing generator units to meet existing potential extreme weather conditions. This may not be cost effective and may create unfair market advantages if implemented. Reclamation acknowledges that when a Generator Owner builds a new generating plant, those units should be designed with the applicable potential extreme weather conditions in mind.

If this recommendation goes forward, Reclamation recommends that prescriptive cold weather design considerations apply only to new generation facilities. Refer to VAR-501-WECC-3.1 Requirement R5 for an example of an acceptable method to implement this recommendation.

Reclamation recommends a requirement for Generator Owners to design new generating units to operate to a specified ambient temperature and weather conditions be contained in the same new standard in the FAC family as that created to identify cold weather critical components and their required maintenance. Please see the example provided in the response to Question 1.a.

Likes 1	Enel Green Power, 5, Johnson Natalie
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Dislikes 0	
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Response

Michael Krum - Salt River Project - 1,3,5,6 - WECC

Answer	
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Document Name	
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Comment	
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No Comment.

Likes 0	
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Dislikes 0	
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Response

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer	
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Document Name	
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Comment	
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MRO NSRF does not believe this recommendation, as written, falls within the scope of what NERC Reliability Standard(s) are authorized to address.

As this recommendation may require Generator Owners to make a significant capital investment, resulting in increased cost to end use ratepayers, the MRO NSRF believes that Section 1201 of the Federal Powers Act (page 349) Section 215, part (3) applies, which in part states, "...the term does not include to enlarge such facilities or to construct new transmission capacity or generation capacity." MRO NSRF is also concerned that state regulators may not approve the cost associated with "design and retro fit."

If this recommendation was to be contained in a Reliability Standard, it would mandate that all current and new generation capacity would need to meet some unknown, specific ambient temperature. If the specific ambient temperature is dependant on the GO to determine, this will not meet the recommendation's intent. This would prevent entities to build needed capacity for the vast amount other seasonal times, when capacity is needed, notwithstanding during extreme (specified) ambient temperatures. As this recommendation requires investment, this recommendation may be more appropriately addressed as part of the FERC tariff as part of Generator Interconnection Agreements (GIA).

Alternatively, this may be inherently covered by the recommendation in 1d (below), where CAPs are used to address generating unit's outage, failure to start, or derates due to freezing. The intent is for generators to perform during freezing (extreme cold) temperatures. It should not matter how Generator Owners achieve this, such as in recommendation d.

If this item remains to be within a Reliability Standard, it is recommended that the GO determine what the specific ambient temperature is for BES generators.

Likes 1	Enel Green Power, 5, Johnson Natalie
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Dislikes 0	
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Response

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

Answer

Document Name

Comment

None – suggest a new NERC GO/GOP Standard to implement recommendation. It is also suggested that recently modified TOP-003-5, EOP-011-2 and IRO-010-4 standards not be modified further and consideration be given for moving Cold Weather Requirements in these Standards to the new Standard.

Likes 0	
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Dislikes 0	
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Response

Susan Sosbe - Wabash Valley Power Association - 1,3

Answer

Document Name

Comment

EOP-011, same as above.

Likes 0	
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Dislikes 0	
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Response

Adrian Raducea - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy - DTE Electric

Answer

Document Name

Comment

FAC-008 Facility Ratings. R2. 2.2.3.

2.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.

2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time). 2.2.4. Operating limitations.

Update to specify extreme cold weather conditions.

However, a single standard combining all the cold weather requirements that can evolve over time is preferable.

Likes 0

Dislikes 0

Response

c. Which Reliability Standard(s) should be revised to address the recommendation: “Generator Owners and Generator Operators are to conduct annual unit-specific cold weather preparedness plan training.”

Adrian Raducea - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy - DTE Electric

Answer

Document Name

Comment

PER-006-1 – Specific Training for Personnel

The purpose clearly states this is to ensure that personnel are trained on specific topics essential to reliability to perform or support Real-time operations of the Bulk Electric System

Extreme Cold Weather Grid Operations, Preparedness, and Coordination is a specific topic for reliability.

Likes 0

Dislikes 0

Response

Susan Sosbe - Wabash Valley Power Association - 1,3

Answer

Document Name

Comment

EOP-011-2 – R8 already calls for the generator specific training.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Suggest modifying PER-006-1 to implement recommendation. It is also suggested that recently modified EOP-011-2 training requirements be moved to the new NERC GO/GOP Standard.

Likes 0

Dislikes 0

Response

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer

Document Name

Comment

The MRO NERC Standards Review Forum (NSRF) recommends addressing this recommendation as two (2) requirements to more accurately address the aspects required of each function:

- Generator Owner maintenance aspects in an **FAC** standard along with items 1, 3, 4, 5 and 6 (see pages 3-4 of the SAR).
- Generator Operator operations aspects in **PER-006**.
- If adopted, MRO NSRF recommends the SDT begin work using the corresponding language currently in EOP-011-2, Requirements R7 and R8 and then retire R7 and R8 from EOP-011-2.

Likes 0

Dislikes 0

Response

Michael Krum - Salt River Project - 1,3,5,6 - WECC

Answer

Document Name

Comment

No Comment.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Reclamation disagrees with the requirement for annual training on routine physical maintenance. No other annual maintenance activities require annual training before doing the work. For example, switching the direction of the cooling fans on unit transformers, turning on the reservoir bubblers, etc., are not activities that warrant annual training. This type of training content is not appropriate for a NERC requirement.

For geographical areas and generation types that typically experience cold weather, an annual training requirement is excessive. Generator Owners and Generator Operators in these areas should only be required to provide initial training on their cold weather preparedness plan and provide recurring training only when the plan is updated. Reclamation recommends placing a requirement for conducting training on unit-specific cold weather preparedness in PER-006. Reclamation also recommends moving EOP-011-2 Requirement R8 to PER-006. The requirement to conduct the cold weather preparedness plan training annually should be added only for geographical areas that do not typically experience cold weather.

Example:

PER-006-X

R2. Each Generator Owner, in conjunction with its Generator Operator shall provide generating unit-specific training to its maintenance and operations personnel responsible for implementing the Generator Owner's cold weather preparedness plan(s) developed pursuant to EOP-011-2 Requirement R7.

R2.1 The generating unit-specific training shall be provided initially and when the cold weather preparedness plan is updated.

Likes 0

Dislikes 0

Response

Jeanne Kurzynowski - CMS Energy - Consumers Energy Company - 3,4,5 - RF, Group Name Consumers Energy Company

Answer

Document Name

Comment

Since it is training, a modified or new PER standard.

Likes 0

Dislikes 0

Response

George Brown - Acciona Energy North America - 5

Answer

Document Name

Comment

Acciona Energy believes this recommendation would be best addressed in Facilities Design, Connections and Maintenance (FAC) suite of NERC Standards in a new standard.

Acciona Energy recommends that the Standards Drafting Team adopt and then retire the applicable language from NERC Reliability Standard EOP-011-2 Emergency Preparedness and Operations, Requirement R7 and R8.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Xcel Energy supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Alliant Energy supports the comments submitted by the MRO NSRF.

Likes 0

Dislikes 0

Response

Keith Jonassen - ISO New England, Inc. - 2 - NPCC

Answer

Document Name

Comment

Recommend revising EOP-011

- Revise EOP-011, R8 (revision in bold):

- Each Generator Owner in conjunction with its Generator Operator shall **identify the entity responsible for providing the generating unit-specific training, and that identified entity shall annually, prior to the start of the winter season, provide** the training to its maintenance or operations personnel responsible for implementing cold weather preparedness plan(s) developed pursuant to Requirement R7.

Likes 0

Dislikes 0

Response

Sean Bodkin - Dominion - Dominion Resources, Inc. - 3,5,6, Group Name Dominion

Answer

Document Name

Comment

Dominion Energy supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

Carl Pineault - Hydro-Qu?bec Production - 1,5

Answer

Document Name

Comment

No comments

Likes 0

Dislikes 0

Response

Kenisha Webber - Entergy - Entergy Services, Inc. - NA - Not Applicable - SERC

Answer

Document Name

Comment

EOP-011-2

Likes 0

Dislikes 0

Response

Jennie Wike - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6 - WECC, Group Name Tacoma Power

Answer

Document Name

Comment

Tacoma Power recommends that all O&P standard training requirements should be in the Personnel Performance, Training and Qualifications (PER) family of standards. The existing Standard PER-006 includes training requirements for the GOP and respective plant personnel. We recommend locating this new training requirement in the PER-006 Standard with appropriate modifications to the applicability section to include both GO and GOP functions. Similarly, we also support expanding the scope of this SAR to include moving the GO/GOP training in EOP-011 R8 to PER-006-1, as was put forward by the LPPC and APPA during the Project 2019-06 commenting period.

We are concerned with locating training requirements in a Standard other than the PER suite of standards. Adding training requirements to other non-training standards creates a condition that makes training requirements hard to locate. Moreover, the technical compliance personnel and training personnel often don't overlap, potentially creating a compliance gap. Locating training requirements outside of PER Standards is also not following identified industry best practices, such as the Standards Efficiency Review recommendations and the recent Project 2007-06.2 that moved training requirements from PRC Standards to the new PER-006-1 Standard.

Likes 1

Platte River Power Authority, 5, Archie Tyson

Dislikes 0

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter

Answer

Document Name

Comment

FirstEnergy supports comments posted by EEI

Likes 0

Dislikes 0

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5,6

Answer

Document Name

Comment

NRG Energy Inc. believes that the recommendation should be included as part of a new standard dedicated to Cold Weather or included in the existing PER-006 standard.

Likes 0

Dislikes 0

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer

Document Name

Comment

Texas RE suggests that an annual requirement could be added to EOP-011 R8, which requires training of the maintenance or operations personnel for implementing the cold weather preparedness plan.

Alternatively, a new Emergency Preparedness and Operations standard could be created to include the following Key Recommendations from the Joint Inquiry: 1a, 1c, 1d, 1e, and 1f. Language from future enforceable EOP-011-2 Requirements R7 and R8 could also be included in this new Emergency Preparedness and Operations standard.

Likes 0

Dislikes 0

Response

Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,3,5

Answer

Document Name

Comment

Reliability Standard EOP-011-2

Likes 0

Dislikes 0

Response

Michael Johnson - Pacific Gas and Electric Company - 1,3,5 - WECC, Group Name PG&E All Segments

Answer

Document Name

Comment

PG&E has participated in the preparation and supports the comments provided by the Edison Electric Institute (EEI) for Q1c.

Likes 0

Dislikes 0

Response

Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro

Answer

Document Name

Comment

This recommendation aligns with Requirements R7 and R8 of EOP-011-2.

BC Hydro recommends that a new EOP Standard(s) focusing on cold weather preparedness be developed to address this recommendation and the Requirements R7 and R8 be moved from EOP-011-2 to the new Standard(s).

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Southern Company recommends that this requirement be included at a future revision date in a new cold weather standard as previously mentioned in Southern Company's response to Question 1a.

However, for initial inclusion, Southern Company recommends that EOP-011-2 R8 be revised to include the “annual unit-specific cold weather preparedness plan training” requirement.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

EOP-011

Likes 0

Dislikes 0

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO

Answer

Document Name

Comment

MPC supports comments submitted by the MRO NERC Standards Review Forum (NSRF).

Likes 0

Dislikes 0

Response

Rebecca Baldwin - Transmission Access Policy Study Group - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

TAPS does not take a position regarding which standard is the appropriate home for the proposed new GO/GOP requirements, but we urge the SDT to consolidate the proposed GO/GOP requirements in a single standard to the extent possible, for ease of reference.

Likes 0

Dislikes 0

Response

Alan Kloster - Evergy - 1,3,5,6 - MRO

Answer

Document Name

Comment

Evergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 1c.

Likes 0

Dislikes 0

Response

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5

Answer

Document Name

Comment

We believe this is addressed by EOP-011-2 R8, with the exception of an annual periodicity. So, EOP-011-2 could be modified to add that periodicity. We also recommend consideration be given to moving it to PER-006 to keep all training together.

Likes 0

Dislikes 0

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

EOP-011-2, Requirement R8 could be modified to address this recommendation. Also, see EEI comments to 1a.

Likes 0

Dislikes 0

Response

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3

Answer

Document Name

Comment

MidAmerican Energy Company supports EEI and MRO NSRF comments

Likes 0

Dislikes 0

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer

Document Name

Comment

The NAGF believes that the recommendation should be included as part of a new standard dedicated to Cold Weather.

Likes 0

Dislikes 0

Response

LaKenya VanNorman - Florida Municipal Power Agency - 3,4,5,6 - SERC

Answer

Document Name

Comment

PER-006 includes training requirements for the GOP and respective plant personnel. We recommend locating this new training requirement in the PER-006 Standard with appropriate modifications to the applicability section to include both GO and GOP functions. We also support expanding the scope of this SAR to include moving the GO/GOP training in EOP-011 R8 to PER-006-1, as was put forward by the LPPC and APPA during the Project 2019-06 commenting period.

We are concerned with locating training requirements in a Standard other than the PER suite of standards. Adding training requirements to other non-training standards creates a condition that makes training requirements hard to find and easy to lose; a condition that is not conducive to a quality

standard. Locating training requirements outside of PER Standards is also not following industry precedent, such as the Standards Efficiency Review recommendations and the recent Project 2007-06.2 that moved training requirements from PRC Standards to the new PER-006-1 Standard.

Likes 0

Dislikes 0

Response

Michele Mihelic - American Clean Power Association - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

ACP believes this can be addressed in the Facilities Design, Connections and Maintenance suite of NERC standards.

Alternatively, it could be addressed in the EOP-011 Emergency Preparedness and Operations Standard as part of the requirement to have and maintain Cold Weather Preparedness Plans (R7 for Generators).

Regardless, ACP recommends requirements for cold weather preparedness plans and training should be in the same standard rather than dispersed across multiple standards.

Likes 2

Mat Bunch, N/A, Bunch Mat; Enel Green Power, 5, Johnson Natalie

Dislikes 0

Response

Jamie Monette - Allete - Minnesota Power, Inc. - 1

Answer

Document Name

Comment

Minnesota Power agrees with MRO's NERC Standards Review Forum (NSRF) comments.

Likes 0

Dislikes 0

Response

Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC

Answer

Document Name

Comment

BPA supports the comments made by the US Bureau of Reclamation.

Likes 0

Dislikes 0

Response

Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee

Answer**Document Name****Comment**

The IRC SRC recommends addressing this recommendation as two (2) requirements to more accurately address the aspects required of each function:

- Generator Owner maintenance aspects in an **FAC** standard along with items 1, 3, 4, 5 and 6 (see pages 3-4 of the SAR).
- Generator Operator operations aspects in **PER-006**.
- o Expand the applicable Functional Entities to include Generator Owners and Generator Operators
- If adopted, IRC SRC recommends the SDT begin work using the corresponding language currently in EOP-011-2, Requirements R7 and R8 and then retire R7 and R8 from EOP-011-2.

Likes 0

Dislikes 0

Response

Natalie Johnson - Enel Green Power - 5

Answer**Document Name****Comment**

Enel North America, Inc. believes that the recommendation to conduct unit-specific cold weather preparedness plan training is best addressed in the EOP-011 Emergency Preparedness and Operations Standard as part of the requirement to have and maintain Cold Weather Preparedness Plans (R7 for Generators). The Cold Weather Preparedness Plan is the best area to address this recommendation because the recommendation relates to item a) above for both identifying and protecting cold-weather-critical components. The addition of this recommendation to the Cold Weather Preparedness Plans enables a comprehensive approach to all aspects of cold weather preparedness, including training in the required plans. In addition, the Cold Weather Preparedness Plans enable Generators to make changes, improve and enhance training more frequently than a standard such as FAC-008 Facility Ratings would facilitate. Enel North America, Inc. therefore believes that this recommendation is best addressed by requiring that it is part of the overall Cold Weather Preparedness Plans in the EOP-011 Standard. This recommendation is best addressed with a planning-based approach.

Alternatively, this can be addressed in the Facilities Design and Maintenance suite of standards. However, the most important thing for Enel North America, Inc. is that these requirements are not dispersed across a few different standards. This may therefore necessitate a separate standard within the Facilities Design and Maintenance suite.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Exelon concurs with the comments submitted by the EEI for this question.

Likes 0

Dislikes 0

Response

Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6

Answer

Document Name

Comment

EOP-011-2, Requirement R8 could be modified to address this recommendation or could be in a stand alone standard.

Likes 0

Dislikes 0

Response

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer

Document Name

Comment

EOP-011-2 (effective 4/1/2023) includes a new Requirement R8 that is applicable to the Generator Owner (GO) in conjunction with its Generator Operator (GOP). R8 states that the GO and GOP “shall identify the entity responsible for providing the generating unit-specific training, and that identified entity shall provide the training to its maintenance or operations personnel responsible for implementing cold weather preparedness plan(s) developed pursuant to Requirement R7”. If R8 does not sufficiently address this FERC/NERC Joint Inquiry report recommendation, EOP-011-2 could be revised to address it. Alternatively, the PER-006-1 standard addresses Generator Operator training for Protection Systems and Remedial Action Schemes (RAS) and could be revised to address the recommendation.

Likes 0

Dislikes 0

Response

Joe McClung - JEA - 1,3,5

Answer

Document Name

Comment

These comments are being submitted on behalf of APPA and LPPC:

Public power believes that all standard training requirements should be in the Personnel Performance, Training and Qualifications (PER) family of standards. The standard PER-006 includes training requirements for the GOP and respective plant personnel. We recommend locating this new training requirement in the PER-006 Standard with appropriate modifications to the applicability section to include both GO and GOP functions. Similarly, we also support expanding the scope of this SAR to include moving the GO/GOP training in EOP-011 R8 to PER-006-1, as was put forward by the LPPC and APPA during the Project 2019-06 commenting period.

We are concerned with locating training requirements in a Standard other than the PER suite of standards. Adding training requirements to other non-training standards creates a condition that makes training requirements hard to locate. Moreover, the technical compliance personnel and training personnel often don't overlap, potentially creating a compliance gap; a condition that is not conducive to appropriate compliance. Locating training requirements outside of PER Standards is also not following identified efficient industry best practices, such as the Standards Efficiency Review recommendations and the recent Project 2007-06.2 that moved training requirements from PRC Standards to the new PER-006-1 Standard.

Likes 0

Dislikes 0

Response

Diana Torres - Imperial Irrigation District - 1,3,5,6

Answer

Document Name

Comment

PER-006 includes training requirements for the GOP and respective plant personnel. Imperial Irrigation District recommends locating this new training requirement in the PER-006 Standard with appropriate modifications to the applicability section to include both GO and GOP functions. Imperial

Irrigation District also supports expanding the scope of this SAR to include moving the GO/GOP training in EOP-011 R8 to PER-006-1, as was put forward by the LPPC and APPA during the Project 2019-06 commenting period.

Imperial Irrigation District is concerned with locating training requirements in a Standard other than the PER suite of standards. Adding training requirements to other non-training standards creates a condition that makes training requirements easier to overlook. Locating training requirements outside of PER Standards is also not following industry precedent, such as the Standards Efficiency Review recommendations and the recent Project 2007-06.2 that moved training requirements from PRC Standards to the new PER-006-1 Standard.

Likes 0

Dislikes 0

Response

Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC

Answer

Document Name

Comment

PER-006 includes training requirements for the GOP and respective plant personnel. SMUD recommends locating this new training requirement in the PER-006 Standard with appropriate modifications to the applicability section to include both GO and GOP functions. SMUD also supports expanding the scope of this SAR to include moving the GO/GOP training in EOP-011 R8 to PER-006-1, as was put forward by the LPPC and APPA during the Project 2019-06 commenting period.

SMUD is concerned with locating training requirements in a Standard other than the PER suite of standards. Adding training requirements to other non-training standards creates a condition that makes training requirements hard to find and easy to lose; a condition that is not conducive to a quality standard. Locating training requirements outside of PER Standards is also not following industry precedent, such as the Standards Efficiency Review recommendations and the recent Project 2007-06.2 that moved training requirements from PRC Standards to the new PER-006-1 Standard.

Likes 0

Dislikes 0

Response

d. Which Reliability Standard(s) should be revised to address the recommendation: “Generator Owners that experience outages, failures to start, or derates due to freezing are to review the generating unit’s outage, failure to start, or derate and develop and implement a corrective action plan for the identified equipment, and evaluate whether the plan applies similar equipment for its other generating units.”

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer

Document Name

Comment

EOP-011-2 (effective 4/1/2023) includes a new Requirement R7 that is applicable to the Generator Owner. R7 requires Generator Owners to “implement and maintain one or more cold weather preparedness plan(s) for its generating units”, and lists the topics that must be addressed in the plan(s) at a minimum. This FERC/NERC Joint Inquiry report recommendation could possibly be addressed by revising EOP-011-2 to add another Generator Owner requirement to address it.

Likes 0

Dislikes 0

Response

Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6

Answer

Document Name

Comment

There are no Reliability Standards currently in effect that could easily be modified to address this recommendation.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Exelon generally concurs with the comments submitted by the EEI for this question. Exelon suggests that permissible actions taken pursuant to a corrective action plan may include revising the generating unit’s declared capability to start and operate in extreme weather conditions.

Likes 0

Dislikes 0

Response

Natalie Johnson - Enel Green Power - 5

Answer

Document Name

Comment

Enel North America, Inc. believes that the recommendation to develop Corrective Action Plans (CAPS) is best addressed in the EOP-011 Emergency Preparedness and Operations Standard as part of the requirement to have and maintain Cold Weather Preparedness Plans (R7 for Generators). The Cold Weather Preparedness Plan is the best area to address this recommendation because the recommendation relates to item a) & c) above. The addition of this recommendation to the Cold Weather Preparedness Plans enables a comprehensive approach to all aspects of cold weather preparedness including following up with CAPs. Enel North America, Inc. recommends that a CAP only be applied in situations where temperature failures occur outside of the operating design conditions for the facility. Otherwise, the outage, failure to start, or derate would be reported through the existing TOP-003 process (see section e and f below). The Cold Weather Preparedness Plans enable Generators to make changes, update, and follow-up on CAPS more frequently than a standard such as FAC-008 Facility Ratings would facilitate. Enel North America, Inc. therefore believes that this recommendation is best addressed by requiring that it is part of the overall Cold Weather Preparedness Plans in the EOP-011 Standard. This recommendation is best addressed with a planning-based approach.

Alternatively, this can be addressed in the Facilities Design and Maintenance suite of standards. However, the most important thing for Enel North America, Inc. is that these requirements are not dispersed across a few different standards. This may therefore necessitate a separate standard within the Facilities Design and Maintenance suite.

Likes 0

Dislikes 0

Response

Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee

Answer

Document Name

Comment

The IRC SRC believes this recommendation would best be addressed in an **FAC** standard along with items 1, 3, 4, 5 and 6 (see pages 3-4 of the SAR).

Likes 0

Dislikes 0

Response

Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC

Answer	
Document Name	
Comment	
BPA supports the comments made by the US Bureau of Reclamation.	
Likes 0	
Dislikes 0	
Response	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	
Document Name	
Comment	
Minnesota Power agrees with MRO's NERC Standards Review Forum (NSRF) comments.	
Likes 0	
Dislikes 0	
Response	
Michele Mihelic - American Clean Power Association - NA - Not Applicable - NA - Not Applicable	
Answer	
Document Name	
Comment	
Please refer to ACP's response for question 1c - same recommendation as above.	
In addition, ACP recommends modifying the recommendation language so that Corrective Action Plans are only developed and implemented when a generating unit experiences an outage, failure to start or derate when the conditions identified in NERC Reliability Standard EOP-011-2 Emergency Preparedness and Operations, Requirement R7.3. et al. are not met.	
Likes 1	Mat Bunch, N/A, Bunch Mat
Dislikes 0	
Response	
LaKenya VanNorman - Florida Municipal Power Agency - 3,4,5,6 - SERC	

Answer	
Document Name	
Comment	
FMPA supports TAPS (Transmission Access Policy Study Group) comments	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	
Document Name	
Comment	
The NAGF believes that the recommendation should be included as part of a new standard dedicated to Cold Weather.	
Likes 0	
Dislikes 0	
Response	
Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3	
Answer	
Document Name	
Comment	
MidAmerican Energy Company supports EEI and MRO NSRF comments	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	
Document Name	

Comment

EOP-011-02 could be used for this recommendation, however, a more efficient approach would be to develop a new Extreme Cold Weather Reliability Standard. Also, see EEI comments to 1a.

There are standards that require corrective action plans (e.g., TPL-007-4, PRC-004-3), and it would be a natural starting point to look at those standards when addressing this recommendation. Corrective action plans for resources that experience outages, failure to start, or derates due to equipment failures resulting from temperatures or weather conditions under which the resource was designed to operate under is important, provided that generating unit design limits are accounted for.

To address these concerns and comments, EEI suggests the following modifications to the SAR:

Generator resources operating within their design specifications that experience outages, failures to start, or derates due to extreme cold weather conditions shall be evaluated by the resource owner and develop and implement a corrective action plan to maintain or restore resource capability.

Likes 0

Dislikes 0

Response

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5

Answer

Document Name

Comment

This appears to fit in EOP-011. However, it should be clear that if the unit operated as designed, no corrective action plan would be necessary.

Likes 0

Dislikes 0

Response

Alan Kloster - Evergy - 1,3,5,6 - MRO

Answer

Document Name

Comment

Evergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 1d.

Likes 0

Dislikes 0

Response

Rebecca Baldwin - Transmission Access Policy Study Group - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

TAPS does not take a position regarding which standard is the appropriate home for the proposed new GO/GOP requirements, but we urge the SDT to consolidate the proposed GO/GOP requirements in a single standard to the extent possible, for ease of reference.

Likes 0

Dislikes 0

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO

Answer

Document Name

Comment

MPC supports comments submitted by the MRO NERC Standards Review Forum (NSRF).

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

EOP-011, Ameren does this currently.

Likes 0

Dislikes 0

Response

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

Answer	
Document Name	
Comment	
<p>The appropriate standard for such a requirement should be in a new standard dedicated solely to cold weather requirements as previously mentioned in Southern Company's response to Question 1a.</p> <p>Of concern to Southern Company is the timeline to develop and implement corrective actions, e.g., a large number of wind turbines may need new equipment and the subsequent lead time for equipment and contract labor could be problematic.</p>	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	
Document Name	
Comment	
<p>BC Hydro recommends that a new Standard(s) focusing on cold weather preparedness be developed to address this recommendation.</p>	
Likes 0	
Dislikes 0	
Response	
Michael Johnson - Pacific Gas and Electric Company - 1,3,5 - WECC, Group Name PG&E All Segments	
Answer	
Document Name	
Comment	
<p>PG&E has participated in the preparation and supports the comments provided by the Edison Electric Institute (EEI) for Q1d.</p>	
Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,3,5	

Answer	
Document Name	
Comment	
Reliability Standard EOP-011-2	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
<p>Texas RE suggests this Key Recommendation could be added as an additional requirement to EOP-011. Texas RE recommends including a timeline requirement for the corrective action plan (CAP) in order to be effective.</p> <p>Alternatively, a new Emergency Preparedness and Operations standard could be created to include the following Key Recommendations from the Joint Inquiry: 1a, 1c, 1d, 1e, and 1f. Language from future enforceable EOP-011-2 Requirements R7 and R8 could also be included in this new Emergency Preparedness and Operations standard.</p> <p>Texas RE also recommends the following:</p> <ul style="list-style-type: none"> Revising the EOP-004 attachment 1 to include a new event type of critical loss due to cold weather. 	
Likes 0	
Dislikes 0	
Response	
Patricia Lynch - NRG - NRG Energy, Inc. - 5,6	
Answer	
Document Name	
Comment	
<p><i>NRG Energy Inc. believes that the recommendation should be included as part of a new standard dedicated to Cold Weather.</i></p>	
Likes 0	

Dislikes 0

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter

Answer

Document Name

Comment

FirstEnergy supports comments posted by EEI

Likes 0

Dislikes 0

Response

Jennie Wike - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6 - WECC, Group Name Tacoma Power

Answer

Document Name

Comment

Instead of prescribing specific retrofits or upgrades, Tacoma Power recommends performing a three tier approach: perform a vulnerability assessment to identify risks, develop actions to mitigate these risks, and then implement the actions. This risk-based approach would also require entities to re-evaluate their vulnerability assessment if failures occur that weren't identified in the assessment. This approach would be similar to how the industry addressed GMD events in Project 2013-03.

Tacoma Power also suggests modifying FAC-008 R2.2 to include a subpart to evaluate facility ratings for extreme cold weather failures, as noted in comment 1a.

Likes 0

Dislikes 0

Response

Kenisha Webber - Entergy - Entergy Services, Inc. - NA - Not Applicable - SERC

Answer

Document Name

Comment

EOP-011-2, Requirement R7 as part of Cold Weather plan

Likes 0

Dislikes 0

Response

Carl Pineault - Hydro-Qu?bec Production - 1,5

Answer

Document Name

Comment

No comments

Likes 0

Dislikes 0

Response

Sean Bodkin - Dominion - Dominion Resources, Inc. - 3,5,6, Group Name Dominion

Answer

Document Name

Comment

Dominion Energy supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

Keith Jonassen - ISO New England, Inc. - 2 - NPCC

Answer

Document Name

Comment

Recommend adding a new requirement to EOP-011

- Add new requirement to EOP-011:
 - “Generator Owners that experience outages, failures to start, or derates due to freezing (or other impacts of Extreme Weather) are to review the generating unit’s outage, failure to start, or derate and develop and implement a corrective action plan for the identified equipment, and evaluate whether the plan applies similar equipment for its other generating units.

- Alternatively, this could also be included in the sub-requirements for R7 as "Corrective Action Plan for reviewing outages, failures to start, or derates due to cold weather or freezing.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Alliant Energy supports the comments submitted by the MRO NSRF.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Xcel Energy supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

George Brown - Acciona Energy North America - 5

Answer

Document Name

Comment

Acciona Energy believes this recommendation would be best addressed in Facilities Design, Connections and Maintenance (FAC) suite of NERC Standards in a new standard.

Likes 0

Dislikes 0

Response

Jeanne Kurzynowski - CMS Energy - Consumers Energy Company - 3,4,5 - RF, Group Name Consumers Energy Company

Answer

Document Name

Comment

EOP and FAC standards; possibly a new PRC standard.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Please see the response to question 1.a. The proposed example is R4.

Likes 0

Dislikes 0

Response

Michael Krum - Salt River Project - 1,3,5,6 - WECC

Answer

Document Name

Comment

No Comment.

Likes 0

Dislikes 0

Response

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer

Document Name

Comment

The MRO NERC Standards Review Forum (NSRF) believes this recommendation would best be addressed in an **FAC** standard along with items 1, 3, 4, 5 and 6 (see pages 3-4 of the SAR).

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

None – suggest a new NERC GO/GOP Standard to implement recommendation. It is also suggested that recently modified TOP-003-5, EOP-011-2 and IRO-010-4 standards not be modified further and consideration be given for moving Cold Weather Requirements in these Standards to the new Standard.

Likes 0

Dislikes 0

Response

Susan Sosbe - Wabash Valley Power Association - 1,3

Answer

Document Name

Comment

We suggest TOP-003-5, Operational Reliability Data: Both the TOP and the BA must maintain a documented specification for data necessary for it to perform its analysis functions and Real-Time Monitoring. Under 2.3.2, this includes generating unit data. Under R5.2, there must be a mutually agreed upon process for resolving data conflicts, so couldn't the CAP requirement be added here?

Likes 0

Dislikes 0

Response

Adrian Raducea - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy - DTE Electric

Answer

Document Name

Comment

Similar to FAC-003 R5, PRC-002 R12 which require Corrective Action Plans, include Corrective Action Plan requirement in EOP-11.

Likes 0

Dislikes 0

Response

e. Which Reliability Standard(s) should be revised to address the recommendation: “The Reliability Standards should be revised to provide greater specificity about the relative roles of the Generator Owners, Generator Operators and Balancing Authorities in determining the generating unit capacity that can be relied upon during “local forecasted cold weather,” which is language from the revised Reliability Standard TOP-003-5, R2.3. -Each Generator Owner/Generator Operator should be required to provide the Balancing Authority with the percentage of the total generating unit capacity that the Generator Owner/Generator Operator reasonably believes the Balancing Authority can rely upon during the “local forecasted cold weather,” including reliability risks related to natural gas fuel contracts. -Each Balancing Authority should be required to use the data provided by the Generator Owner/Generator Operator, combined with its evaluation, based on experience, to calculate the percentage of each individual generating unit’s total capacity that it can rely upon during the “local forecasted cold weather,” and share its calculation with the Reliability Coordinator. Each Balancing Authority should be required to use that calculation of the percentage of total generating capacity that it can rely upon to “prepare its analysis functions and Realtime monitoring,” and to “manag[e] generating resources in its Balancing Authority Area to address . . . fuel supply and inventory concerns” as part of its Capacity and Energy Emergency Operating Plans.”

Adrian Raducea - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy - DTE Electric

Answer

Document Name

Comment

TOP-003-5 and EOP-011-3

Likes 0

Dislikes 0

Response

Susan Sosbe - Wabash Valley Power Association - 1,3

Answer

Document Name

Comment

We suggest TOP-003-5: Since the language is already in this Standard, shouldn't the specificity be outlined in this Standard as well? Also see “d” above.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

None – suggest a new NERC GO/GOP Standard to implement recommendation. It is also suggested that recently modified TOP-003-5, EOP-011-2 and IRO-010-4 standards not be modified further and consideration be given for moving Cold Weather Requirements in these Standards to the new Standard.

Likes 0

Dislikes 0

Response

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer

Document Name

Comment

Requested by 2022/2023

MRO NSRF's response has been categorized based on the applicable functional entity and task:

- Generator Owner and capacity that can be relied upon during 'local forecasted cold weather:'

MRO NSRF seeks clarification. As both the Generator Owner (GO) and Generator Operator (GOP) are both cited in this recommendation, what is the proposed action for each function; i.e. for the GO portion of this proposed requirement, is the intent to provide a **"static" design number for planning purposes?** If so, the MRO NERF believes this recommendation would best be performed by Generator Owners and addressed in a new FAC standard.

If this aspect is retained in the scope of the SAR, MRO NSRF recommends the SDT address this recommendation in an **FAC** standard along with items 1, 3, 4, 5 and 6 (see pages 3-4 of the SAR) and begin work using the corresponding language currently in EOP-011-2, Requirements R7 and R8 and then retire R7 and R8 from EOP-011-2.

In addition, the scope of the SAR should be updated to require that the capacity number provided to the Balancing Authority should reflect the inoperability of any cold-weather-critical components that can not be protected, and therefore cannot be relied upon (see our response to question 1a above).

- Generator Operator and capacity that can be relied upon during 'local forecasted cold weather:'

MRO NSRF seeks clarification. As both the GO and GOP are both cited in this recommendation, what is the proposed action for each function; i.e. for the GOP portion of this proposed requirement, is the intent to provide a **"dynamic" real-time number for operating purposes?** If so, MRO NSRF recommends this be retained in TOP-003-5.

In addition, the scope of the SAR should be updated to require that the capacity number provided to the Balancing Authority should reflect the inoperability of any cold-weather-critical components that can not be protected, and therefore cannot be relied upon (see our response to question 1a above).

- Balancing Authority and calculation of capacity that it can rely upon during 'local forecasted cold weather:'

MRO NSRF believes TOP-002-4, R4, Part 4.4 would be a best fit location. Justification. R4. Each BA shall have an Operating Plan for the next-day that addresses: 4.4 Capacity and energy reserve requirements, including deliverability capability.

Likes 0

Dislikes 0

Response

Michael Krum - Salt River Project - 1,3,5,6 - WECC

Answer

Document Name

Comment

No Comment.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Reclamation recommends any additional information required in a Balancing Authority's data specification should be contained in TOP-003 Requirement R2.

Reclamation recommends additional requirements for what Balancing Authorities should do with the information they receive pursuant to their data specifications should be contained in TOP-002.

Likes 0

Dislikes 0

Response

Jeanne Kurzynowski - CMS Energy - Consumers Energy Company - 3,4,5 - RF, Group Name Consumers Energy Company

Answer

Document Name

Comment

We believe this is a MISO Generator Verification Capacity Testing issue. If new/revised standard(s) is developed, it really needs to be in the same standard that will address question 1.a.b. and d.

Likes 0

Dislikes 0

Response

George Brown - Acciona Energy North America - 5

Answer**Document Name****Comment**

The response has been categorized by task:

- Generator Owner/Operator determining the generating units reliable capacity

Acciona Energy believes this recommendation would be best addressed in Facilities Design, Connections and Maintenance (FAC) suite of NERC Standards. Perhaps, the most appropriate place for this recommendation would be NERC Reliability Standard FAC-008 – Facility Ratings (NERC FAC-008). NERC FAC-008 already includes the majority, if not all equipment, cold-weather-critical components and systems that would be affected by extreme cold weather, which the loss of would ultimately affect the Facility Rating.

- Communicating the generating unit’s reliable capacity to the Balancing Authority and Reliability Coordinator:

Acciona Energy believes this recommendation would be best addressed in NERC Reliability Standard TOP-003 – Operational Reliability Data.

- Balancing Authority determining the generating units reliable capacity and managing resources:

Acciona Energy supports Midwest Reliability Organization’s (MRO) NERC Standards Review Forum’s (NSRF) comments on this question as it relates to Balancing Authorities.

Likes 0

Dislikes 0

Response

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

Answer**Document Name****Comment**

Xcel Energy supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Alliant Energy supports the comments submitted by the MRO NSRF.

Likes 0

Dislikes 0

Response

Keith Jonassen - ISO New England, Inc. - 2 - NPCC

Answer

Document Name

Comment

Recommend revising TOP-003-5, TOP-002-4, and EOP-011-2

- Add new requirement to TOP-003-5 which would be applicable to GO/GOPs:
 - Each Generator Owner/Generator Operator should be required to provide the Balancing Authority with the percentage of the total generating unit capacity that the Generator Owner/Generator Operator reasonably believes the Balancing Authority can rely upon during the “local forecasted cold weather,” including reliability risks related to natural gas fuel contracts
- Add new requirement to which would be applicable to BAs:
 - Each Balancing Authority should be required to use the data provided by the Generator Owner/Generator Operator, combined with its evaluation, based on experience, to calculate the percentage of each individual generating unit’s total capacity that it can rely upon during the “local forecasted cold weather,” and share its calculation with the Reliability Coordinator
- Add new requirement to TOP-002-4 which would be applicable to BAs:
 - Each Balancing Authority should be required to use a calculation of the percentage of total generating capacity that it can rely upon to prepare its analysis functions and Realtime monitoring, and to “manage generating resources in its Balancing Authority Area to address . . . fuel supply and inventory concerns” as part of its Capacity and Energy Emergency Operating Plans
- Add new requirement to EOP-011-2 which would be applicable to BAs:
 - Each Balancing Authority should be required to use a calculation of the percentage of total generating capacity that it can rely upon to manag[e] generating resources in its Balancing Authority Area to address fuel supply and inventory concerns as part of its Capacity and Energy Emergency Operating Plans

Likes 0

Dislikes 0

Response

Sean Bodkin - Dominion - Dominion Resources, Inc. - 3,5,6, Group Name Dominion

Answer

Document Name

Comment

Dominion Energy supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

Carl Pineault - Hydro-Quebec Production - 1,5

Answer

Document Name

Comment

No comments

Likes 0

Dislikes 0

Response

Michael DePalma - Onward Energy - NA - Not Applicable - MRO,WECC,Texas RE,NPCC

Answer

Document Name

Comment

We believe the section: Each Generator Owner/Generator Operator should be required to provide the Balancing Authority with the percentage of the total generating unit capacity that the Generator Owner/Generator Operator reasonably believes the Balancing Authority can rely upon during the "local forecasted cold weather," including reliability risks related to natural gas fuel contracts is already covered in existing TOP standards. Our generation assets report available capacity accurately. We request this section be removed from future Standard changes.

Likes 0

Dislikes 0

Response

Jennie Wike - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6 - WECC, Group Name Tacoma Power

Answer

Document Name

Comment

Tacoma Power suggests housing these recommendations either in TOP-003 or IRO-010. Specifically, any information that must be provided to the RC should be housed in IRO-010.

Likes 1

Platte River Power Authority, 5, Archie Tyson

Dislikes 0

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter

Answer

Document Name

Comment

FirstEnergy supports comments posted by EEI

Likes 0

Dislikes 0

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5,6

Answer

Document Name

Comment

NRG Energy Inc. believes that the recommendation should be included as part of a new standard dedicated to Cold Weather.

Likes 0

Dislikes 0

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer

Document Name

Comment

Texas RE suggests TOP-003 would be an appropriate standard for this Key Recommendation as noted in the Joint Inquiry. Additionally, the drafting team should consider revising IRO-010 as well, since it would be helpful for the RC to have this information. Texas RE also recommends considering a revision to Table 1 in TPL-001 to include cold weather so the PA/PC have the most accurate information in planning studies.

Likes 0

Dislikes 0

Response

Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,3,5

Answer

Document Name

Comment

N/A

Likes 0

Dislikes 0

Response

Michael Johnson - Pacific Gas and Electric Company - 1,3,5 - WECC, Group Name PG&E All Segments

Answer

Document Name

Comment

PG&E has participated in the preparation and supports the comments provided by the Edison Electric Institute (EEI) for Q1e.

Likes 0

Dislikes 0

Response

Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro

Answer

Document Name

Comment

BC Hydro suggests that this recommendation will impact TOP-002 R4 (BA) and IRO-014 R1 (RC) as it will impact Energy and Capacity Operating Plans; also due to data required to develop these Plans, TOP-003 and IRO-010 could be impacted.

BC Hydro also suggests that considerations be given to FAC-008, FAC-011 and FAC-014 as the operating limits or inputs to operating limits may be impacted by this recommendation.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

The appropriate standard for such a requirement should be in a new standard dedicated solely to cold weather requirements as previously mentioned in Southern Company's response to Question 1a.

The intent of the requirement should be focused on timely and accurate communications as risks to generation availability are identified by the GO/GOP. We see this proposed enhanced requirement as an event-based, real-time communication of changes in the capability data provided in TOP-005-5, R2.3.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Since the referenced language is from TOP-003-5, we believe it should be put in this standard.

Likes 0

Dislikes 0

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO

Answer

Document Name

Comment

MPC supports comments submitted by the MRO NERC Standards Review Forum (NSRF).

Likes 0

Dislikes 0

Response

Rebecca Baldwin - Transmission Access Policy Study Group - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

TAPS does not take a position regarding which standard is the appropriate home for the proposed new GO/GOP requirements, but we urge the SDT to consolidate the proposed GO/GOP requirements in a single standard to the extent possible, for ease of reference.

Likes 0

Dislikes 0

Response

Alan Kloster - Evergy - 1,3,5,6 - MRO

Answer

Document Name

Comment

Evergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 1e.

Likes 0

Dislikes 0

Response

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5

Answer

Document Name

Comment

For the Balancing Authority (BA) role, we think either TOP-002-4, R4, Part 4.4, or TOP-003-5 R2 would be an appropriate place to describe the BA role.
For the Generator Owner (GO) role, we think EOP-011-2, R7, Part 7.3 would be the best fit.

Likes 0

Dislikes 0

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

The SDT should evaluate whether TOP-003 is the best solution for this recommendation. Also, see EEI's comments for question 1a. EEI also offers the following revised language to the SAR:

The Reliability Standards should be revised to provide greater specificity about the relative roles of the Generator Owners, Generator Operators and Balancing Authorities in determining the generating unit capacity that can be relied upon during "local forecasted cold weather," which is language from the revised Reliability Standard TOP-003-5, R2.3. Each Generator Owner/Generator Operator should be required to provide the Balancing Authority with the percentage of the total generating unit capacity that the Generator Owner/Generator Operator reasonably believes the Balancing Authority can rely upon during the "local forecasted cold weather," including reliability risks related to natural gas fuel contracts. -Each Balancing Authority should be required to use the data provided by the Generator Owner/Generator Operator, combined with its evaluation, based on experience, to calculate the percentage of each individual generating unit's total capacity that it can rely upon during the "local forecasted cold weather," and share its calculation with the Reliability Coordinator. Each Balancing Authority **is to consider that resource capacity projections provided by the GO cannot be provided with precision. Entity estimates are based on the historical performance of the resource under similar operating condition and the variability of weather conditions can result in errors in these projections. Armed with this knowledge, the BA should be required to use those projections** in their calculations of the percentage of total generating capacity that it can rely upon to "prepare its analysis functions and Realtime monitoring," and to "manag[e] generating resources in its Balancing Authority Area to address . . . fuel supply and inventory concerns" as part of its Capacity and Energy Emergency Operating Plans.

Likes 0

Dislikes 0

Response

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3

Answer

Document Name

Comment

MidAmerican Energy Company supports EEI and MRO NSRF comments

Likes 0

Dislikes 0

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer

Document Name

Comment

The NAGF believes that the recommendation should be included as part of a new standard dedicated to Cold Weather.

Likes 0

Dislikes 0

Response

LaKenya VanNorman - Florida Municipal Power Agency - 3,4,5,6 - SERC

Answer

Document Name

Comment

FMPA supports TAPS (Transmission Access Policy Study Group) comments

Likes 0

Dislikes 0

Response

Michele Mihelic - American Clean Power Association - NA - Not Applicable - NA - Not Applicable

Answer	
Document Name	
Comment	
<p>ACP members believe that the determination of Generation Unit capacity during local forecasted cold weather is best addressed in the Facility Ratings standard (FAC-008). This requirement already addresses equipment capabilities and limitations. NERC FAC-008 already includes the majority, if not all equipment, cold-weather-critical components and systems that would be affected by extreme cold weather, which the loss of would ultimately affect the Facility Rating. This is a static design number that would not require frequent enhancements and improvements such as the Cold Weather Preparedness Plans might. ACP recommends the equipment listing approach, as it is more suitable for this type of activity.</p> <p>ACP recommends the communication of the generating unit's reliable capability to the Balancing Authority and Reliability Coordinator would be best addressed in NERC Reliability Standard TOP-003 – Operational Reliability Data, where this additional information can be added to the outage and derate process, which already exists.</p> <p>ACP does not have a recommendation on this question as it relates to the BA.</p>	
Likes 2	Mat Bunch, N/A, Bunch Mat; Enel Green Power, 5, Johnson Natalie
Dislikes 0	
Response	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	
Document Name	
Comment	
<p>Minnesota Power agrees with MRO's NERC Standards Review Forum (NSRF) comments.</p>	
Likes 0	
Dislikes 0	
Response	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	
Document Name	
Comment	
<p>BPA supports the comments made by the US Bureau of Reclamation.</p>	
Likes 0	

Dislikes 0

Response

Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee

Answer

Document Name

Comment

IRC SRC has categorized its response based on the applicable functional entity and task:

- **Generator Owner** - capacity that can be relied upon during 'local forecasted cold weather'

IRC SRC seeks clarification. As both the Generator Owner (GO) and Generator Operator (GOP) are both cited in this recommendation, what is the proposed action for each function; i.e. for the GO portion of this proposed requirement, is the intent to provide a **"static" design number for planning purposes**? If so, the IRC SRC believes this recommendation would best be performed by Generator Owners and addressed in a new FAC standard.

If this aspect is retained in the scope of the SAR, IRC SRC recommends the SDT address this recommendation in an **FAC** standard along with items 1, 3, 4, 5 and 6 (see pages 3-4 of the SAR) and begin work using the corresponding language currently in EOP-011-2, Requirements R7 and R8 and then retire R7 and R8 from EOP-011-2.

In addition, the scope of the SAR should be updated to require that the capacity number provided to the Balancing Authority should reflect the inoperability of any cold-weather-critical components that can not be protected, and therefore cannot be relied upon (see our response to question 1a above).

- **Generator Operator** - capacity that can be relied upon during 'local forecasted cold weather'

IRC SRC seeks clarification. As both the GO and GOP are both cited in this recommendation, what is the proposed action for each function; i.e. for the GOP portion of this proposed requirement, is the intent to provide a **"dynamic" real-time number for operating purposes**? If so, IRC SRC recommends this be retained in TOP-003-5.

In addition, the scope of the SAR should be updated to require that the capacity number provided to the Balancing Authority should reflect the inoperability of any cold-weather-critical components that can not be protected, and therefore cannot be relied upon (see our response to question 1a above).

- **Balancing Authority** - calculation of capacity that can be relied upon during 'local forecasted cold weather'

IRC SRC believes TOP-003-5 would be a best fit location.

R4. Each BA shall have an Operating Plan for the next-day that addresses:

4.4 Capacity and energy reserve requirements, including deliverability capability.

Likes 0

Dislikes 0

Response

Travis Fisher - Electricity Consumers Resource Council (ELCON) - 7

Answer

Document Name

Comment

ELCON disagrees that Generator Owners are in the best position to judge the reliability risks related to natural gas fuel contracts. The onus should be on natural gas suppliers to estimate the probability of a failure to deliver fuel, or on FERC to prevent natural gas pipelines from withholding available gas from generators with firm contracts (the “price majeure” phenomenon).

Likes 0

Dislikes 0

Response

Natalie Johnson - Enel Green Power - 5

Answer

Document Name

Comment

The determination of Generation Unit capacity during local forecasted cold weather is best addressed in the Facility Ratings standard (FAC-008), as this requirement already addresses equipment capabilities and limitations and is a static design number that would not require frequent enhancements and improvements such as the Cold Weather Preparedness Plans might. An equipment listing approach is more suitable for this type of activity involving static design numbers and how they are impacted by cold weather.

Communication of the generating unit’s reliable capability to the Balancing Authority and Reliability Coordinator is best addressed in the TOP-003 for reliability data. This additional information can be added to the outage and derate process that already exists.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Exelon concurs with the comments submitted by the EEI for this question.

Likes 0

Dislikes 0

Response

Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6

Answer

Document Name

Comment

AZPS agrees with the comments provided by EEI; EEI does not agree that TOP-005 as it would not be a good solution for this recommendation. The SDT should consider this recommendation to be included as a stand alone standard in which the Generator Operator is able to provide the data on exceptions.

Likes 0

Dislikes 0

Response

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer

Document Name

Comment

TOP-003-5 (effective 4/1/2023) addresses the operational reliability data needs of the Balancing Authorities in Requirements R2 (BA) and R5 (GO, GOP). We suggest this standard be revised to address the part of the recommendation regarding the GO/GOP's consideration of "local forecasted cold weather" impacts when providing their generating unit capability data to the BA (with corresponding change to EOP-011-2, R7). The part of the recommendation that indicates the BA "should be required to use the data provided by the Generator Owner/Generator Operator, combined with its evaluation,....to calculate the percentage of each individual generating unit's total capacity that it can rely upon during the "local forecasted cold weather", could be addressed in a revision to TOP-002-4 (R4). The part of the recommendation that the BA "share its calculation with the Reliability Coordinator" could also be addressed in a revision to TOP-002-4 (R7). The part of the recommendation that the BA "use that calculation of the percentage of total generating capacity that it can rely upon to "prepare its analysis functions and Realtime monitoring," and to "manag[e] generating resources in its Balancing Authority Area to address . . . fuel supply and inventory concerns" as part of its Capacity and Energy Emergency Operating Plans" could be addressed in a revision to TOP-010-1(i) and EOP-011-2, respectively.

Likes 0

Dislikes 0

Response

f. Which Reliability Standard(s) should be revised to address the recommendation: “In EOP-011-2, R7.3.2, Generator Owners are to account for the effects of precipitation and accelerated cooling effect of wind when providing temperature data.”

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer

Document Name

Comment

EOP-011-2 (effective 4/1/2023) and the corresponding data specification requirements in IRO-010-4 (R1 part 1.3.2) and TOP-003-5 (R1 part 1.3.2; R2 part 2.3.2).

Likes 0

Dislikes 0

Response

Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6

Answer

Document Name

Comment

AZPS agrees with the comments provided by EEI; EOP-011-2, Requirement 7, subpart 7.3 could be modified to address the recommendations.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Exelon concurs with the comments submitted by the EEI for this question. Additionally, accounting for the effects of precipitation and the accelerated cooling effect of wind will result in a range of possible minimum operating temperatures for each generating unit. Exelon suggests the drafting team allow generator owners to assign tolerances to declared design temperature data.

Likes 0

Dislikes 0

Response	
Natalie Johnson - Enel Green Power - 5	
Answer	
Document Name	
Comment	
<p>With respect to accounting for the effect of precipitation and the cooling effect of wind, Enel North America, Inc. recommends this be incorporated in NERC Reliability Standard FAC-008 – Facility Ratings, as this requirement already addresses equipment capabilities and limitations and is a static design number that would not require frequent enhancements and improvements such as the Cold Weather Preparedness Plans might.</p> <p>Communication of the generating unit’s reliable capability to the Balancing Authority and Reliability Coordinator is best addressed in the TOP-003 for reliability data. This additional information can be added to the outage and derate process that already exists. Better forecasting tools to predict the effects of precipitation and accelerated cooling effect of wind (such as NOAA) would help Generators better manage, plan, and incorporate this into their temperature data.</p>	
Likes 0	
Dislikes 0	
Response	
Travis Fisher - Electricity Consumers Resource Council (ELCON) - 7	
Answer	
Document Name	
Comment	
<p>ELCON believes question 1(a) takes care of this question—Generator Owners already must identify and protect cold-weather-critical components and systems for each generating unit, which should include accounting for the effects of precipitation and accelerated cooling effect of wind.</p>	
Likes 0	
Dislikes 0	
Response	
Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee	
Answer	
Document Name	
Comment	

Similar to IRC SRC's response to question 1e above, our response has been categorized based on the applicable functional entity and task:

- Accounting for effects of precipitation and accelerated cooling effect of wind:

IRC SRC believes this recommendation would best be performed by Generator Owners and addressed in a new FAC standard along with items 1, 3, 4, 5 and 6 (see pages 3-4 of the SAR).

If this proposal is adopted, IRC SRC recommends the Standard Drafting Team (SDT) begin work using the corresponding language currently in EOP-011-2, Requirements R7 and R8 and then retire R7 and R8 from EOP-011-2.

- Providing temperature data:

IRC SRC believes this recommendation would best be performed by Generator Operators and addressed in TOP-003.

Likes 0

Dislikes 0

Response

Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC

Answer

Document Name

Comment

BPA supports the comments made by the US Bureau of Reclamation.

Likes 0

Dislikes 0

Response

Jamie Monette - Allete - Minnesota Power, Inc. - 1

Answer

Document Name

Comment

Minnesota Power agrees with MRO's NERC Standards Review Forum (NSRF) comments.

Likes 0

Dislikes 0

Response	
Michele Mihelic - American Clean Power Association - NA - Not Applicable - NA - Not Applicable	
Answer	
Document Name	
Comment	
<p>With respect to accounting for the effect of precipitation and the cooling effect of wind, ACP recommends this recommendation be incorporated in NERC Reliability Standard FAC-008 – Facility Ratings. NERC FAC-008 already includes the majority, if not all equipment, cold-weather-critical components and systems that would be affected by extreme cold weather, which the loss of would ultimately affect the Facility Rating.</p> <p>ACP recommends that the Standards Drafting Team adopt and then remove the applicable language from NERC Reliability Standard EOP-011-2 Emergency Preparedness and Operations, Requirement R7 and R8.</p> <p>With respect to reporting temperature data, ACP believe this is best addressed in the TOP-003 Operational Reliability Data.</p>	
Likes 2	Mat Bunch, N/A, Bunch Mat; Enel Green Power, 5, Johnson Natalie
Dislikes 0	
Response	
LaKenya VanNorman - Florida Municipal Power Agency - 3,4,5,6 - SERC	
Answer	
Document Name	
Comment	
FMPA supports TAPS (Transmission Access Policy Study Group) comments	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	
Document Name	
Comment	
The NAGF believes that the recommendation should be included as part of a new standard dedicated to Cold Weather.	

Likes 0

Dislikes 0

Response

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3

Answer

Document Name

Comment

MidAmerican Energy supports EEI and MRO NSRF comments

Likes 0

Dislikes 0

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

While EEI supports the recommendation to require GOs to account for the effects of precipitation and accelerated cooling effects when providing capacity projections, this information is based on original design specifications and historical unit performance during similar operating conditions and therefore cannot be precisely established. EOP-011-2, Requirement R7, subpart 7.3 could be modified to address this recommendation. Also, see EEI's comments to question 1a.

Likes 0

Dislikes 0

Response

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5

Answer

Document Name

Comment

We recommend this be added to EOP-011-2, R2

Likes 0

Dislikes 0

Response

Alan Kloster - Evergy - 1,3,5,6 - MRO

Answer

Document Name

Comment

Evergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 1f.

Likes 0

Dislikes 0

Response

Rebecca Baldwin - Transmission Access Policy Study Group - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

TAPS does not take a position regarding which standard is the appropriate home for the proposed new GO/GOP requirements, but we urge the SDT to consolidate the proposed GO/GOP requirements in a single standard to the extent possible, for ease of reference.

Likes 0

Dislikes 0

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO

Answer

Document Name

Comment

MPC supports comments submitted by the MRO NERC Standards Review Forum (NSRF).

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Since the referenced language is from EOP-011-2, it should be put in this standard.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Southern Company recommends that this requirement along with all cold weather standards be included at a future revision date in a new cold weather standard as previously mentioned in Southern Company's response to Question 1a.

However, for initial inclusion, Southern Company recommends that EOP-011-2 R7 be revised and consider revising IRO-010-4, R1 and TOP-003-4, R1 to include the additional weather parameters.

Likes 0

Dislikes 0

Response

Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro

Answer

Document Name

Comment

This recommendation aligns with Requirements R7 and R8 of EOP-011-2.

BC Hydro recommends that a new EOP Standard(s) focusing on cold weather preparedness be developed to address this recommendation and the Requirements R7 and R8 be moved from EOP-011-2 to the new Standard(s).

Likes 0

Dislikes 0

Response

Michael Johnson - Pacific Gas and Electric Company - 1,3,5 - WECC, Group Name PG&E All Segments

Answer

Document Name

Comment

PG&E has participated in the preparation and supports the comments provided by the Edison Electric Institute (EEI) for Q1f.

Likes 0

Dislikes 0

Response

Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,3,5

Answer

Document Name

Comment

Reliability Standard EOP-011-2

Likes 0

Dislikes 0

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer

Document Name

Comment

Texas RE suggests this Key Recommendation could be included in EOP-011. Alternatively, a new Emergency Preparedness and Operations standard could be created to include the following Key Recommendations from the Joint Inquiry: 1a, 1c,1d, 1e, and 1f. Language from future enforceable EOP-011-2 Requirements R7 and R8 could also be included in this new Emergency Preparedness and Operations standard.

Texas RE also recommends the drafting team consider whether cold weather should be included in the RC's SOL Methodology in accordance with proposed Reliability Standard FAC-011-4.

Likes 0

Dislikes 0

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5,6

Answer

Document Name

Comment

NRG Energy Inc. believes that the recommendation should be included as part of a new standard dedicated to Cold Weather.

Likes 0

Dislikes 0

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter

Answer

Document Name

Comment

FirstEnergy supports comments posted by EEI

Likes 0

Dislikes 0

Response

Jennie Wike - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6 - WECC, Group Name Tacoma Power

Answer

Document Name	
Comment	
See comments for item 1b with respect to modifying FAC-008 R2.2. Also, Tacoma Power suggests the SDT consider how this recommendation (as currently written) applies to all generation types, such as hydrogeneration.	
Likes 0	
Dislikes 0	
Response	
Michael DePalma - Onward Energy - NA - Not Applicable - MRO,WECC,Texas RE,NPCC	
Answer	
Document Name	
Comment	
<i>There is ambiguity as to how a Generator Owner would account for the described weather/atmospheric effects. Would NERC or other Regional Entities also measure these effects for comparison? Are engineering studies to be required by Generator Owners, or would an attestation or other statement assuring the Generator Owner has accounted for these effects be acceptable? Who is expected to provide the raw "Temperature Data"?</i>	
Likes 0	
Dislikes 0	
Response	
Kenisha Webber - Entergy - Entergy Services, Inc. - NA - Not Applicable - SERC	
Answer	
Document Name	
Comment	
EOP-011-2	
Likes 0	
Dislikes 0	
Response	
Carl Pineault - Hydro-Quebec Production - 1,5	
Answer	

Document Name	
Comment	
No comments	
Likes 0	
Dislikes 0	
Response	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 3,5,6, Group Name Dominion	
Answer	
Document Name	
Comment	
Dominion Energy supports the comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Keith Jonassen - ISO New England, Inc. - 2 - NPCC	
Answer	
Document Name	
Comment	
Recommend revising EOP-011-2 R7	
Revise EOP-011-2, R7.3.2 to state:	
<ul style="list-style-type: none"> • 7.3.2 In a manner which accounts for the effects of precipitation (i.e. icing and snowpack) and the accelerated cooling effect of wind, generating unit(s) minimum: <ul style="list-style-type: none"> ○ 7.3.2.1. design temperature; or ○ 7.3.2.2. historical operating temperature; or ○ 7.3.2.3 current cold weather performance temperature determined by an engineering analysis. 	
Likes 0	
Dislikes 0	
Response	

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

Answer

Document Name

Comment

Alliant Energy supports the comments submitted by the MRO NSRF.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Xcel Energy supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

George Brown - Acciona Energy North America - 5

Answer

Document Name

Comment

The response has been categorized by task:

- Accounting for effects of precipitation and accelerated cooling effect of wind:

Acciona Energy believes this recommendation would be best addressed in Facilities Design, Connections and Maintenance (FAC) suite of NERC Standards. Perhaps, the most appropriate place for this recommendation would be NERC Reliability Standard FAC-008 – Facility Ratings (NERC FAC-008). NERC FAC-008 already includes the majority, if not all equipment, cold-weather-critical components and systems that would be affected by extreme cold weather, which the loss of would ultimately effect the Facility Rating.

Acciona Energy recommends that the Standards Drafting Team adopt and then retire the applicable language from NERC Reliability Standard EOP-011-2 Emergency Preparedness and Operations, Requirement R7 and R8.

- Providing temperature data:

Acciona Energy believes this recommendation would be best addressed in NERC Reliability Standard TOP-003 – Operational Reliability Data.

Likes 0

Dislikes 0

Response

Jeanne Kurzynowski - CMS Energy - Consumers Energy Company - 3,4,5 - RF, Group Name Consumers Energy Company

Answer

Document Name

Comment

FAC or MOD standards. This needs to be modeled ahead of time as part of facility ratings. Waiting until you are in Emergency conditions is too late.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Reclamation recommends EOP-011 Requirement R7.3.2 could be revised to clarify this information.

Likes 0

Dislikes 0

Response

Michael Krum - Salt River Project - 1,3,5,6 - WECC

Answer

Document Name

Comment

No Comment.

Likes 0

Dislikes 0

Response

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer

Document Name

Comment

Similar to MRO NSRF's response to question 1e above, our response has been categorized based on the applicable functional entity and task:

- Accounting for effects of precipitation and accelerated cooling effect of wind:

MRO NSRF believes this recommendation would best be performed by Generator Owners and addressed in a new FAC standard along with items 1, 3, 4, 5 and 6 (see pages 3-4 of the SAR).

If this proposal is adopted, MRO NSRF recommends the Standard Drafting Team (SDT) begin work using the corresponding language currently in EOP-011-2, Requirements R7 and R8 and then retire R7 and R8 from EOP-011-2.

- Providing temperature data:

MRO NSRF believes this recommendation would best be performed by Generator Operators and addressed in TOP-003.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

None – suggest a new NERC GO/GOP Standard to implement recommendation. It is also suggested that recently modified TOP-003-5, EOP-011-2 and IRO-010-4 standards not be modified further and consideration be given for moving those Cold Weather Requirements in these Standards to the new Standard.

Likes 0

Dislikes 0

Response

Susan Sosbe - Wabash Valley Power Association - 1,3

Answer

Document Name

Comment

Rather than updating another Standard, shouldn't the language stay in EOP-011-2 and perhaps be revised for clarity?

Likes 0

Dislikes 0

Response

Adrian Raducea - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy - DTE Electric

Answer

Document Name

Comment

Include in EOP-011-3 in R7.3.2

Likes 0

Dislikes 0

Response

g. Which Reliability Standard(s) should be revised to address the recommendation: “To protect critical natural gas infrastructure from manual and automatic load shedding in order to avoid adversely affecting bulk-power system reliability, Balancing Authorities’ and Transmission Operators’ (TOPs) provisions for operator-controlled manual load shedding are to include processes for identifying and protecting critical natural gas infrastructure loads in their respective areas from firm load shed. Critical natural gas infrastructure loads are natural gas production, processing and intrastate and interstate pipeline facility loads which, if de-energized, could adversely affect the provision of natural gas to bulk-power system natural gas-fired generation.”

Adrian Raducea - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy - DTE Electric

Answer

Document Name

Comment

PRC-006-5 could possibly be modified to address the cold weather recommendations by clarifying or adding design requirements for the Planning Coordinators to consider when developing the criteria for UFLS.

Likes 0

Dislikes 0

Response

Susan Sosbe - Wabash Valley Power Association - 1,3

Answer

Document Name

Comment

We would suggest EOP-011-2.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Suggest revising approved NERC Standard EOP-011-2 R1.2.5 to implement recommendation.

Likes 0

Dislikes 0

Response

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer

Document Name

Comment

The following is broke down by Applicable Entity and either Manual or Automatic load shedding.

Manual load shedding.

TOP. Expand EOP-011-2, R1, Part 1.2.5 (or within a new Standard). Justification, 1.2.5. Provisions for operator-controlled manual Load shedding that minimizes the overlap with automatic Load shedding and are capable of being implemented in a timeframe adequate for mitigating the Emergency;

BA. Expand EOP-011-2, R2, Part 2.2.8 (or within a new Standard). Justification, 2.2.8. Provisions for operator-controlled manual Load shedding that minimizes the overlap with automatic Load shedding and are capable of being implemented in a timeframe adequate for mitigating the Emergency;

Automatic load shedding.

TO. Expand PRC-006-5 and any other relevant regional UFLS standards.

DP. Expand PRC-006-5 and any other relevant regional UFLS standards

Likes 0

Dislikes 0

Response

Michael Krum - Salt River Project - 1,3,5,6 - WECC

Answer

Document Name

Comment

No Comment.

Likes 0

Dislikes 0

Response

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

Answer	
Document Name	
Comment	
Reclamation identifies this recommendation does not fit well into any existing reliability standards. Reclamation suggests a new standard in the EOP family to compliment EOP-005 (generator blackstart) might appropriately address this recommendation. Facilities that might be subjected to load shedding should be required to have an alternate, independent power source.	
Likes 0	
Dislikes 0	
Response	
Jeanne Kurzynowski - CMS Energy - Consumers Energy Company - 3,4,5 - RF, Group Name Consumers Energy Company	
Answer	
Document Name	
Comment	
We believe this is a MISO/gas issue. Who is going to be responsible for coordination? RC/ISO, BA, TOP? The answer determines what standard(s) will require modification. Could be IRO or TOP standards.	
Likes 0	
Dislikes 0	
Response	
George Brown - Acciona Energy North America - 5	
Answer	
Document Name	
Comment	
Acciona Energy supports Midwest Reliability Organization's (MRO) NERC Standards Review Forum's (NSRF) comments on this question.	
Likes 0	
Dislikes 0	
Response	
Amy Casuscelli - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	

Answer	
Document Name	
Comment	
Xcel Energy supports the comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	
Document Name	
Comment	
Alliant Energy supports the comments submitted by the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Keith Jonassen - ISO New England, Inc. - 2 - NPCC	
Answer	
Document Name	
Comment	
Recommend revising EOP-011-2	
<ul style="list-style-type: none"> • Revise EOP-011-2, R2 with new sub-requirement that states: <ul style="list-style-type: none"> ○ Balancing Authorities' provisions for operator-controlled manual load shedding are to include processes for identifying and protecting critical natural gas infrastructure loads in their respective areas from firm load shed. • Revise EOP-011-2, R1 with new sub-requirement that states: <ul style="list-style-type: none"> ○ Transmission Operators' (TOPs) provisions for operator-controlled manual load shedding are to include processes for identifying and protecting critical natural gas infrastructure loads in their respective areas from firm load shed. • Create new defined term: Critical natural gas infrastructure loads are natural gas production, processing and intrastate and interstate pipeline facility loads which, if de-energized, could adversely affect the provision of natural gas to bulk-power system natural gas-fired generation. 	
Likes 0	
Dislikes 0	

Response	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 3,5,6, Group Name Dominion	
Answer	
Document Name	
Comment	
Dominion Energy supports the comments submitted by EEI. In addition, Dominion Energy does not support BAs or TOPs attempting to identify critical natural gas infrastructure. The gas pipeline owners have that responsibility and any requirements regarding identification should be in a tariff and not a reliability standard.	
Likes 0	
Dislikes 0	
Response	
Carl Pineault - Hydro-Quebec Production - 1,5	
Answer	
Document Name	
Comment	
No comments	
Likes 0	
Dislikes 0	
Response	
Jennie Wike - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6 - WECC, Group Name Tacoma Power	
Answer	
Document Name	
Comment	
Tacoma Power suggests adding this recommendation to EOP-011, where there are existing load shedding Requirements. Tacoma Power also recommends that when drafting this Requirement, the SDT should create a separate standalone Requirement, rather than adding a sub-part to an existing Requirement. This makes it easier for TOPs and BAs that don't have natural gas infrastructure in their footprint to classify the entire Requirement as "Do Not Own" and avoid complicated RSAW narratives describing what sub-parts do and do not apply.	
Likes 1	Platte River Power Authority, 5, Archie Tyson

Dislikes 0

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter

Answer

Document Name

Comment

FirstEnergy supports comments posted by EEI

Likes 0

Dislikes 0

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5,6

Answer

Document Name

Comment

NRG Energy Inc. has no comment regarding this recommendation as it is not related to GO/GOPs.

Likes 0

Dislikes 0

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer

Document Name

Comment

Texas RE recommends the drafting team consider addressing Key Recommendations 1i, 1h, and 1j from the Joint Inquiry in a similar manner as they are all related to one another. The drafting team could consider the following standard categories:

- Emergency Preparedness and Operations (EOP), since manual load shed is an emergency measure;
- Protection and Control (PRC), since the PRC standards already include undervoltage load shed and under frequency load shed;
- Transmission Operations (TOP), since the TOP would be the responsible entity for identifying and protecting critical natural gas infrastructure loads in their respective areas from firm load shed;

- Transmission Planning (TPL), since it would be helpful for the Transmission Planners to understand which natural gas infrastructure loads are deemed critical for planning; and
- Any combination of EOP, PRC, TOP, and TPL standards the drafting team sees fit.

Additionally, Texas RE recommends including a requirement for corrective action during System restoration so it does not affect natural gas loads that are to be protected from firm load shed. This could be included in the TOPs' system restoration plans, as required in EOP-005.

In addition to having a process for identifying and protecting critical natural gas infrastructure loads from firm load, Texas RE recommends including other critical loads such as law enforcement, hospitals, and 24-Hour emergency services facilities such as fire and rescue garages.

Likes 0

Dislikes 0

Response

Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,3,5

Answer

Document Name

Comment

N/A

Likes 0

Dislikes 0

Response

Michael Johnson - Pacific Gas and Electric Company - 1,3,5 - WECC, Group Name PG&E All Segments

Answer

Document Name

Comment

PG&E has participated in the preparation and supports the comments provided by the Edison Electric Institute (EEI) for Q1g.

Likes 0

Dislikes 0

Response

Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro

Answer

Document Name

Comment

BC Hydro suggest that EOP-011 and possibly PRC-006 could be modified to address this recommendation.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Southern Company recommends dividing this requirement amongst the following two standards as load shedding and the need to protect critical gas infrastructure could occur during other seasons; therefore, including it in existing non-cold weather standards is appropriate.

- EOP-011-2: Add **manual load shedding** requirements to R1 for the Transmission Operator and R2 for the Balancing Authority.
- PRC-006-5: Revise **automatic load shedding** requirements to include provisions for the Transmission Operator and Distribution Provider.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

EOP-011, PRC-006, and regional PRC-006 where applicable.

Likes 0

Dislikes 0

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO

Answer

Document Name

Comment

MPC supports comments submitted by the MRO NERC Standards Review Forum (NSRF).

Likes 0

Dislikes 0

Response

Gul Khan - Oncor Electric Delivery - 1 - Texas RE

Answer

Document Name

Comment

EOP-011-1

Likes 0

Dislikes 0

Response

Quintin Lee - Eversource Energy - 1,3, Group Name Eversource Group

Answer

Document Name

Comment

EOP-011 is the Reliability Standard that should be revised to address the recommendation.

Note: GO/GOPs not TOPs should be required to provide the gas infrastructure that is necessary to run their plants to their associated DPs. DPs then can be required to pass the identified circuits to the TOPs.

Likes 0

Dislikes 0

Response

Alan Kloster - Evergy - 1,3,5,6 - MRO

Answer

Document Name

Comment

Evergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 1g.

Likes 0

Dislikes 0

Response

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5

Answer

Document Name

Comment

We do not agree that this recommendation should fall entirely on NERC registered entities. Instead, we believe that natural gas providers should be required to provide a list of their critical facilities to the utilities and maintain it as facilities change in the future. The companion NERC requirements, to incorporate such lists into our load shedding plans, could be treated as modifications to the following requirements:

For Manual Load Shedding:

Transmission Operators (TOP) – expand EOP-011-2, R1

Balancing Authorities (BA) – expand EOP-011-2, R2

For Automatic load shedding:

Transmission Owners (TO) that own UFLS – expand PRC-006-5 and any other relevant regional UFLS standards to include a new requirement(s) to address this recommendation.

Likes 0

Dislikes 0

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

EOP-011-2 could be a suitable Reliability Standard to ensure necessary oversight of manual and automatic load shedding programs are designed and implemented by responsible entities to ensure the protection of critical natural gas infrastructure from inadvertent manual or automatic load shedding in order to avoid adversely affecting bulk-power system reliability. However, without some mechanism for natural gas infrastructure owners to identify and report which of their facilities are critical, a NERC Reliability Standard may not be effective. (See our General Comments above) Moreover, it is possible that individual state regulations and retail tariffs may already define what load is considered critical and what can and cannot be shed during emergency operating conditions. NERC should also recognize that separating identified critical natural gas infrastructure for this purpose is a consequential task that could be difficult or impractical to accomplish. For example, the facility may be served by the only available distribution feeder in that area and separating that one facility might require the installation of a new distribution line or rerouting another feeder for the sole purpose of supplying what otherwise might be considered a small load.

Alternatively, EOP-011-2 could address the oversight and planning issues, while PRC-006-5 (UFLS) and PRC-010-2-5 (UVLS) could be used for the implementation part avoiding adding the TOs and DPs to EOP-011-2. Regardless of the approach, information from the natural gas infrastructure owners is needed. Additionally, Transmission Service Providers may be a potential source for information regarding which natural gas facilities might be critical since they are responsible for administering transmission tariffs and providing transmission service to transmission customers.

Likes 0

Dislikes 0

Response

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3

Answer

Document Name

Comment

MidAmerican Energy Company supports EEI and MRO NSRF comments

Likes 0

Dislikes 0

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer

Document Name

Comment

The NAGF has no comment regarding this recommendation.

Likes 0

Dislikes 0

Response

Michele Mihelic - American Clean Power Association - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

ACP does not have a recommendation on this question.

Likes 0

Dislikes 0

Response

Jamie Monette - Allete - Minnesota Power, Inc. - 1

Answer

Document Name

Comment

Minnesota Power agrees with MRO's NERC Standards Review Forum (NSRF) comments.

Likes 0

Dislikes 0

Response

Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC

Answer

Document Name

Comment

BPA agrees with the comments submitted by the US Bureau of Reclamation with additional comments. BPA believes there is an opportunity to alleviate future issues by requiring Critical natural gas facility design to include on-site back-up generator(s) and Auto-Restoration plan(s).

Likes 0

Dislikes 0

Response

Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee

Answer

Document Name

Comment

IRC SRC has categorized its response by Applicable Entity and Manual or Automatic load shedding.

Manual load shed

Transmission Operator (TOP): Expand EOP-011-2, R1, Part 1.2.5

1.2.5. Provisions for operator-controlled manual Load shedding that minimizes the overlap with automatic Load shedding and are capable of being implemented in a timeframe adequate for mitigating the Emergency;

Balancing Authority (BA): Expand EOP-011-2, R2, Part 2.2.8

2.2.8. Provisions for operator-controlled manual Load shedding that minimizes the overlap with automatic Load shedding and are capable of being implemented in a timeframe adequate for mitigating the Emergency;

Automatic load shed

Transmission Owners (TO) that own UFLS: Expand PRC-006-5 and any other relevant regional UFLS standards.

Distribution Providers (DP) that own UFLS: Expand PRC-006-5 and any other relevant regional UFLS standards

Likes 0

Dislikes 0

Response

Natalie Johnson - Enel Green Power - 5

Answer

Document Name

Comment

Enel North America, Inc. supports Midwest Reliability Organization's (MRO) NERC Standards Review Forum's (NSRF) comments on this question.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Exelon concurs with the comments submitted by the EEI for this question.

Likes 0

Dislikes 0

Response

Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6

Answer

Document Name

Comment

AZPS agrees with the comments provided by EEI such that PRC-006 may be the solution to incorporate the recommendation. However, AZPS does not agree with the recommendation as written as it may not be feasible or economically advisable on how this would be implemented, more specifically "to protect critical natural gas infrastructure loads in our respective areas from firm load shed."

Likes 0

Dislikes 0

Response

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer

Document Name

Comment

EOP-011-2 (effective 4/1/2023). For the Transmission Operator (TOP), Requirement 1, part 1.2.5 requires the TOP's Operating Plan(s) to mitigate operating Emergencies in its Transmission Operator Area to include "provisions for operator-controlled manual Load shedding that minimizes the overlap with automatic Load shedding and are capable of being implemented in a timeframe adequate for mitigating the Emergency". For the Balancing Authority (BA), Requirement 2, part 2.2.8 requires the BA's Operating Plan(s) to mitigate Capacity Emergencies and Energy Emergencies within its Balancing Authority Area to include "provisions for operator-controlled manual Load shedding that minimizes the overlap with automatic Load shedding and are capable of being implemented in a timeframe adequate for mitigating the Emergency". A revision of these requirements could address this recommendation.

Likes 0

Dislikes 0

Response

h. Which Reliability Standard(s) should be revised to address the recommendation: “Balancing Authorities’ operating plans (for contingency reserves and to mitigate capacity and energy emergencies) are to prohibit use of critical natural gas infrastructure loads for demand response.”

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer

Document Name

Comment

EOP-011-2 (effective 4/1/2023). Requirement 2, part 2.2.7 requires the BA’s Operating Plan(s) to mitigate Capacity Emergencies and Energy Emergencies within its Balancing Authority Area to include “use of Interruptible Load, curtailable Load and demand response”. A revision of this requirement could address this recommendation. However, it should be considered that the Balancing Authority may not be the entity that “designs” demand response programs with the end-use customers. Are all BA’s positioned to prohibit use of critical natural gas infrastructure loads for demand response?

Likes 0

Dislikes 0

Response

Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6

Answer

Document Name

Comment

AZPS agrees with the comments provided by EEI; demand response programs are voluntary programs and we are unaware of any Reliability Standards that could address this recommendation. Additionally, as Demand Response Programs are contractual agreements, it may be difficult to revise already established DR Programs.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Exelon concurs with the comments submitted by the EEI for this question.

Likes 0

Dislikes 0

Response

Natalie Johnson - Enel Green Power - 5

Answer

Document Name

Comment

Requiring Balancing Authorities to prohibit a commercial program such as Demand Response is outside the scope of NERC's jurisdiction and therefore should not be addressed in a NERC Reliability Standard. In 2012, NERC created a working group to assess whether Demand Response is an applicable entity for NERC Reliability Standards. The Functional Model Working Group (FMWG) formed a Functional Model Demand Response Advisory Team (FMDRAT) to assess the need to include a Demand Response (DR) Functional Entity in the Functional Model Version 6. The Working Group released a report that concluded, "Imposing reliability standards to force entities responsible for DR operations to comply with commercial agreements would be inappropriate, may not achieve the desired outcome, and in fact may discourage entities from participating in DR programs." As Demand Response is essentially a business arrangement, improvements from the February 2021 cold weather event are best addressed through the commercial mechanisms already in place to drive desired outcomes. Since NERC has previously investigated this issue resulting in concrete conclusions, it would be arbitrary to act in opposition of their conclusions without first conducting a new investigation.

Likes 0

Dislikes 0

Response

Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee

Answer

Document Name

Comment

IRC SRC recommends this recommendation be addressed in TOP-002-4, R4, Part 4.4.

R4. Each BA shall have an Operating Plan for the next-day that addresses:

4.4 Capacity and energy reserve requirements, including deliverability capability.

IRC SRC notes that to ensure this recommendation is effective in producing the results anticipated, a corresponding requirement on those entities providing the Balancing Authority with demand response data; e.g. Distribution Providers, would also be necessary.

Likes 0

Dislikes 0

Response

Travis Fisher - Electricity Consumers Resource Council (ELCON) - 7

Answer

Document Name

Comment

We disagree that natural gas infrastructure loads should be prohibited—apparently in a blanket fashion and at all times—from being used as demand response resources. These resources are a valuable tool both from a reliability and an economic perspective and should not be prohibited from offering demand response.

Likes 0

Dislikes 0

Response

Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC

Answer

Document Name

Comment

BPA supports the comments made by the US Bureau of Reclamation.

Likes 0

Dislikes 0

Response

Jamie Monette - Allete - Minnesota Power, Inc. - 1

Answer

Document Name

Comment

Minnesota Power agrees with MRO's NERC Standards Review Forum (NSRF) comments.

Likes 0

Dislikes 0

Response

Michele Mihelic - American Clean Power Association - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

ACP does not have a recommendation on this question.

Likes 0

Dislikes 0

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer

Document Name

Comment

The NAGF has no comment regarding this recommendation.

Likes 0

Dislikes 0

Response

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3

Answer

Document Name

Comment

MidAmerican Energy supports EEI and MRO NSRF comments

Likes 0

Dislikes 0

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

Given that demand response programs are voluntary, demand-side programs developed to incent customers to voluntarily reduce energy consumption during periods of peak demand, during high energy prices, and during extreme weather conditions, we are unaware of any Reliability Standard that could address this recommendation. This recommendation may be more suitable to be addressed by state retail electric tariffs.

Likes 0

Dislikes 0

Response

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5

Answer

Document Name

Comment

We recommend incorporating into TOP-002-4, R4.

Likes 0

Dislikes 0

Response

Alan Kloster - Eergy - 1,3,5,6 - MRO

Answer

Document Name

Comment

Eergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 1h.

Likes 0

Dislikes 0

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO

Answer

Document Name

Comment

MPC supports comments submitted by the MRO NERC Standards Review Forum (NSRF).

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

This could possibly go under an IRO standard.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Southern Company recommends that EOP-011-2 be revised to address the recommendation pertaining to the Balancing Authority operating plans related to the use of critical natural gas infrastructure loads for demand response.

Likes 0

Dislikes 0

Response

Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro

Answer

Document Name	
Comment	
BC Hydro suggest that TOP-002 and EOP-011 could be modified to address this recommendation.	
Likes 0	
Dislikes 0	
Response	
Michael Johnson - Pacific Gas and Electric Company - 1,3,5 - WECC, Group Name PG&E All Segments	
Answer	
Document Name	
Comment	
PG&E has participated in the preparation and supports the comments provided by the Edison Electric Institute (EEI) for Q1h.	
Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,3,5	
Answer	
Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	

Texas RE recommends the drafting team consider addressing Key Recommendations 1i, 1h, and 1j from the Joint Inquiry in a similar manner as they are all related to one another. The drafting team could consider the following standard categories:

- Protection and Control (PRC), since the PRC standards already include undervoltage load shed and under frequency load shed;
- Transmission Operations (TOP), since the TOP would be the responsible entity for identifying and protecting critical natural gas infrastructure loads in their respective areas from firm load shed;
- Transmission Operations (TOP), since the BA would be the responsible entity for specifying the identification (and maintaining protection for) critical natural gas infrastructure loads in their respective areas to perform its analysis functions and Real-time monitoring;
- Transmission Planning (TPL), since it would be helpful for the Transmission Planners to understand which natural gas infrastructure loads are deemed critical for planning;
- Emergency Preparedness and Operations (EOP), since this activity is most likely to occur during an emergency; and
- Any combination of PRC, TOP, TPL, and EOP standards the drafting team sees fit.

Additionally, Texas RE recommends including a requirement for corrective action during System restoration so it does not affect natural gas loads that are to be protected from firm load shed. This could be included in the TOPs' system restoration plans, as required in EOP-005.

Likes 0

Dislikes 0

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5,6

Answer

Document Name

Comment

NRG Energy Inc. has no comment regarding this recommendation as it is not related to GO/GOPs.

Likes 0

Dislikes 0

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter

Answer

Document Name

Comment

FirstEnergy supports comments posted by EEI

Likes 0

Dislikes 0

Response

Carl Pineault - Hydro-Quebec Production - 1,5

Answer

Document Name

Comment

No comments

Likes 0

Dislikes 0

Response

Sean Bodkin - Dominion - Dominion Resources, Inc. - 3,5,6, Group Name Dominion

Answer

Document Name

Comment

Dominion Energy supports the comments submitted by EEI. In addition, the prohibition on demand response is a market issue and should be defined in a tariff or market rules, not a reliability standard governing plans.

Likes 0

Dislikes 0

Response

Keith Jonassen - ISO New England, Inc. - 2 - NPCC

Answer

Document Name

Comment

Recommend revising EOP-011-2

- Revise EOP-011-2, R2 with new sub-requirement that states:
 - Balancing Authorities' operating plans (for contingency reserves and to mitigate capacity and energy emergencies) are to prohibit use of critical natural gas infrastructure loads for demand response."

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Alliant Energy supports the comments submitted by the MRO NSRF.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Xcel Energy supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

George Brown - Acciona Energy North America - 5

Answer

Document Name

Comment

Acciona Energy supports Midwest Reliability Organization's (MRO) NERC Standards Review Forum's (NSRF) comments on this question.

Likes 0

Dislikes 0

Response

Jeanne Kurzynowski - CMS Energy - Consumers Energy Company - 3,4,5 - RF, Group Name Consumers Energy Company

Answer

Document Name

Comment

BAL-502 possibly. Better to include in a new extreme weather standard that addresses all the above questions.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Reclamation recommends BAL-502-RF-03 be leveraged as the basis for a continent-wide standard to address this recommendation.

Likes 0

Dislikes 0

Response

Michael Krum - Salt River Project - 1,3,5,6 - WECC

Answer

Document Name

Comment

No Comment.

Likes 0

Dislikes 0

Response

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer

Document Name

Comment

MRO NSRF recommends this recommendation be addressed in TOP-002-4, R4, Part 4.4. Justification, R4. Each BA shall have an Operating Plan for the next-day that addresses: 4.4 Capacity and energy reserve requirements, including deliverability capability.

MRO NSRF notes that to ensure this recommendation is effective in producing the results anticipated, a corresponding requirement on those entities providing the Balancing Authority with demand response data; e.g. Distribution Providers, would also be necessary.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Suggest revising approved NERC Standard EOP-011-2 R2.2.1 and R2.2.8 to implement recommendation.

Likes 0

Dislikes 0

Response

Susan Sosbe - Wabash Valley Power Association - 1,3

Answer

Document Name

Comment

We would suggest EOP-011-2.

Likes 0

Dislikes 0

Response

Adrian Raducea - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy - DTE Electric

Answer

Document Name

Comment

EOP-011-3

Likes 0

Dislikes 0

Response

i. Which Reliability Standard(s) should be revised to address the recommendation: “In minimizing the overlap of manual and automatic load shed, the load shed procedures of Transmission Operators, Transmission Owners (TOs) and Distribution Providers (DPs) should separate the circuits that will be used for manual load shed from circuits used for underfrequency load shed (UFLS), undervoltage load shed (UVLS) or serving critical load. UFLS/UVLS circuits should only be used for manual load shed as a last resort and for UFLS circuits, should start with the final stage (lowest frequency).”

Adrian Raducea - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy - DTE Electric

Answer

Document Name

Comment

PRC-006-5 could possibly be modified to address the cold weather recommendations by clarifying or adding design requirements for the Planning Coordinators to consider when developing the criteria for UFLS.

Likes 0

Dislikes 0

Response

Susan Sosbe - Wabash Valley Power Association - 1,3

Answer

Document Name

Comment

Our suggestion is PRC-010-2 as 4.1.3 requires UVLS entities to be responsible for the ownership, operation, or control of UVLS equipment as required by the UVLS Program established by the TP or PC. R1 could be expanded to include the language above. R2 already requires UVLS entities to adhere to the UVLS Program specifications determined by its PC and TP, so if this additional responsibility was added to R1, the requirement to comply with it is already contained in R2.

For UFLS, our suggestion is to add this language to PRC-006-5 as this Standard contains the UFLS Program Requirements. Reliability Standard PRC-006-5 needs to be revised in any case so that we have consistency between Regions and not separate Regional Standards.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

None – this recommendation is redundant and does not require additional consideration; currently covered in EOP-011-2 R1.2.5.

Likes 0

Dislikes 0

Response

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer

Document Name

Comment

Same as recommendation 1.g., The following is broke down by Applicable Entity and either Manual or Automatic load shedding.

Manual load shedding.

TOP. Expand EOP-011-2, R1, Part 1.2.5 (or within a new Standard). Justification, 1.2.5. Provisions for operator-controlled manual Load shedding that minimizes the overlap with automatic Load shedding and are capable of being implemented in a timeframe adequate for mitigating the Emergency;

BA. Expand EOP-011-2, R2, Part 2.2.8 (or within a new Standard). Justification, 2.2.8. Provisions for operator-controlled manual Load shedding that minimizes the overlap with automatic Load shedding and are capable of being implemented in a timeframe adequate for mitigating the Emergency;

Automatic load shedding.

TO. Expand PRC-006-5 and any other relevant regional UFLS standards.

DP. Expand PRC-006-5 and any other relevant regional UFLS standards.

Likes 0

Dislikes 0

Response

Michael Krum - Salt River Project - 1,3,5,6 - WECC

Answer

Document Name

Comment

No Comment.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Reclamation recommends the existing UFLS/UVLS standards be modified to address this recommendation, specifically, PRC-006 and PRC-010.

Likes 0

Dislikes 0

Response

Jeanne Kurzynowski - CMS Energy - Consumers Energy Company - 3,4,5 - RF, Group Name Consumers Energy Company

Answer

Document Name

Comment

PRC standards.

Likes 0

Dislikes 0

Response

George Brown - Acciona Energy North America - 5

Answer

Document Name

Comment

Acciona Energy supports Midwest Reliability Organization's (MRO) NERC Standards Review Forum's (NSRF) comments on this question.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Xcel Energy supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Alliant Energy supports the comments submitted by the MRO NSRF.

Likes 0

Dislikes 0

Response

Keith Jonassen - ISO New England, Inc. - 2 - NPCC

Answer

Document Name

Comment

Clarify existing requirement R1.2.5 under EOP-011-2

Likes 0

Dislikes 0

Response

Sean Bodkin - Dominion - Dominion Resources, Inc. - 3,5,6, Group Name Dominion

Answer	
Document Name	
Comment	
Dominion Energy supports the comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Carl Pineault - Hydro-Quebec Production - 1,5	
Answer	
Document Name	
Comment	
No comments	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	
Document Name	
Comment	
FirstEnergy supports comments posted by EEI	
Likes 0	
Dislikes 0	
Response	
Jennie Wike - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6 - WECC, Group Name Tacoma Power	
Answer	
Document Name	

Comment

Tacoma Power suggests adding this recommendation to EOP-011, where there are existing load shedding Requirements. Specifically, Tacoma Power suggests either revising R1.2.5 and R2.2.8 to incorporate this recommendation, or creating a new standalone Requirement that combines this new recommendation with R1.2.5 and R2.2.8.

Likes 0

Dislikes 0

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5,6

Answer**Document Name****Comment**

NRG Energy Inc. has no comment regarding this recommendation as it is not related to GO/GOPs.

Likes 0

Dislikes 0

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer**Document Name****Comment**

Texas RE recommends the drafting team consider addressing Key Recommendations 1i, 1h, and 1j from the Joint Inquiry in a similar manner as they are all related to one another. The drafting team could consider the following standard categories:

- Protection and Control (PRC), since the PRC standards already include undervoltage load shed and under frequency load shed;
- Transmission Operations (TOP), since the TOP would be the responsible entity for identifying and protecting critical natural gas infrastructure loads in their respective areas from firm load shed;
- Transmission Planning (TPL), since it would be helpful for the Transmission Planners to understand which natural gas infrastructure loads are deemed critical for planning;
- Revising the EOP-004 attachment 1 to include a new event type of critical loss due to cold weather; and
- Any combination of PRC, TOP, TPL, and EOP standards the drafting team sees fit.

Additionally, Texas RE recommends including a requirement for corrective action during System restoration so it does not affect natural gas loads that are to be protected from firm load shed. This could be included in the TOPs' system restoration plans, as required in EOP-005.

Likes 0

Dislikes 0

Response

Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,3,5

Answer

Document Name

Comment

N/A

Likes 0

Dislikes 0

Response

Michael Johnson - Pacific Gas and Electric Company - 1,3,5 - WECC, Group Name PG&E All Segments

Answer

Document Name

Comment

PG&E has participated in the preparation and supports the comments provided by the Edison Electric Institute (EEI) for Q1i.

Likes 0

Dislikes 0

Response

Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro

Answer

Document Name

Comment

BC Hydro suggests that EOP-011, PRC-006 and PRC-010 could be modified to address this recommendation.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

As outlined in Question 1g, Southern Company recommends dividing load shedding requirements amongst the following two standards:

- EOP-011-2: Add **manual load shedding** requirements to R1 for the Transmission Operator and R2 for the Balancing Authority.
- PRC-006-5: Revise **automatic load shedding** requirements to include provisions for the Transmission Operator and Distribution Provider.

Additionally, Southern Company recommends revising PRC-010-2 for UVLS criteria.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

EOP-011, PRC-006, regional PRC-006 where applicable.

Likes 0

Dislikes 0

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO

Answer

Document Name

Comment

MPC supports comments submitted by the MRO NERC Standards Review Forum (NSRF).

Likes 0

Dislikes 0

Response

Alan Kloster - Evergy - 1,3,5,6 - MRO

Answer

Document Name

Comment

Evergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 1i.

Likes 0

Dislikes 0

Response

Quintin Lee - Eversource Energy - 1,3, Group Name Eversource Group

Answer

Document Name

Comment

EOP-011 is the Reliability Standard that should be revised to address the recommendation..

Note: Need to define what 'critical load' is so that these programs can work. As a suggestion, the sentence could be changed to:

'should separate the circuits that will be used for manual load shed from circuits used for underfrequency load shed (UFLS), undervoltage load shed (UVLS) or serving critical loads. (i.e., loads that would adversely impact the reliable operation of the BES within 15 minutes if shed.)

Likes 0

Dislikes 0

Response

Gul Khan - Oncor Electric Delivery - 1 - Texas RE

Answer

Document Name

Comment

EOP-011-1

Likes 0

Dislikes 0

Response

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5

Answer

Document Name

Comment

For Manual Load Shedding:
Transmission Operators (TOP) – expand EOP-011-2, R1

For Automatic load shedding:
Transmission Owners (TO) that own UFLS – expand PRC-006-5 and any other relevant regional UFLS standards to include a new requirement(s) to address this recommendation

Distribution Providers (DP) that own UFLS - expand PRC-006-5 and any other relevant regional UFLS standards to include a new requirement(s) to address this recommendation

Likes 0

Dislikes 0

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

EOP-011-2 would be a suitable Reliability Standard to ensure and minimize the overlap of manual and automatic load shed programs, processes and procedures of Transmission Operators, Transmission Owners (TOs) and Distribution Providers (DPs). Although the actual separate of the circuits that will be used for manual load shed from circuits used for underfrequency load shed (UFLS), undervoltage load shed (UVLS) or serving critical load would be the TOs and DPs, the planning and oversight should come from the responsible TOPs. While there are a number of PRC Reliability Standards that address load shedding, none of those standards address both UVLS and UFLS and their oversight planning and coordination. For this reason, EOP-011-2 appears to be the best choice to address this recommendation.

Likes 0

Dislikes 0

Response

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3

Answer

Document Name

Comment

MidAmerican Energy Company supports EEI and MRO NSRF comments

Likes 0

Dislikes 0

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer

Document Name

Comment

The NAGF has no comment regarding this recommendation.

Likes 0

Dislikes 0

Response

Michele Mihelic - American Clean Power Association - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

ACP does not have a recommendation on this question.

Likes 0

Dislikes 0

Response

Jamie Monette - Allete - Minnesota Power, Inc. - 1

Answer

Document Name

Comment

Minnesota Power agrees with MRO's NERC Standards Review Forum (NSRF) comments.

Likes 0

Dislikes 0

Response

Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC

Answer

Document Name

Comment

BPA's UFLS plans avoid Natural Gas and other critical loads. If BPA issues a Manual Load Shed directive, it is up to the recipient of that directive to make an informed decision regarding which loads to shed within their distribution area. BPA prescribes a certain amount of MW load, within a certain amount of time, in the Manual Load Shed plan. Then, the recipient of the directive (Public Utility, etc.) decides which loads to shed. In order for BPA to meet the minimum requirements, for both Manual and Automatic Load Shed, it would equate to roughly $\frac{3}{4}$ of the load in BPA's Balancing Authority Area. BPA believes it is not practical or feasible to completely minimize overlap between the Manual and Automatic Load Shed plans. BPA disagrees with the report's recommendation pertaining to this issue, thus, does not recommend modifying any current Reliability Standards (PRC-006, PRC-010, etc.) at this time.

Likes 0

Dislikes 0

Response

Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee

Answer

Document Name

Comment

IRC SRC has categorized its response by Applicable Entity and Manual or Automatic load shedding.

Manual load shed

Transmission Operator (TOP): Expand EOP-011-2, R1, Part 1.2.5

1.2.5. Provisions for operator-controlled manual Load shedding that minimizes the overlap with automatic Load shedding and are capable of being implemented in a timeframe adequate for mitigating the Emergency;

Balancing Authority (BA): Expand EOP-011-2, R2, Part 2.2.8

2.2.8. Provisions for operator-controlled manual Load shedding that minimizes the overlap with automatic Load shedding and are capable of being implemented in a timeframe adequate for mitigating the Emergency;

Automatic load shed

Transmission Owners (TO) that own UFLS: Expand PRC-006-5 and any other relevant regional UFLS standards.

Distribution Providers (DP) that own UFLS: Expand PRC-006-5 and any other relevant regional UFLS standards

Likes 0

Dislikes 0

Response

Natalie Johnson - Enel Green Power - 5

Answer

Document Name

Comment

Enel North America, Inc. supports Midwest Reliability Organization's (MRO) NERC Standards Review Forum's (NSRF) comments on this question.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Exelon concurs with the comments submitted by the EEI for this question.

Likes 0

Dislikes 0

Response	
Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	
Response	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	
Document Name	
Comment	
<p><i>EOP-011-2 (effective 4/1/2023) Requirement 1, part 1.2.5 requires the Transmission Operator's Operating Plan(s) to mitigate operating Emergencies in its Transmission Operator Area to include "provisions for operator-controlled manual Load shedding that minimizes the overlap with automatic Load shedding and are capable of being implemented in a timeframe adequate for mitigating the Emergency". A revision of this requirement could partially address this recommendation. Revisions to PRC-006-5 (Automatic Underfrequency Load Shedding) and PRC-010-2 (Undervoltage Load Shedding) should also be considered to address involvement of the UFLS and UVLS owning entities (Transmission Owner, Distribution Provider, UFLS-Only Distribution Provider).</i></p>	
Likes 0	
Dislikes 0	
Response	

2. Do you believe there are alternatives or more cost effective options to address the recommendations the in FERC/NERC Joint Inquiry report? If so, please provide your recommendation and, if appropriate, technical or procedural justification.

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer No

Document Name

Comment

None

Likes 0

Dislikes 0

Response

Jamie Monette - Allete - Minnesota Power, Inc. - 1

Answer No

Document Name

Comment

Minnesota Power agrees with MRO's NERC Standards Review Forum (NSRF) comments.

Likes 0

Dislikes 0

Response

Michele Mihelic - American Clean Power Association - NA - Not Applicable - NA - Not Applicable

Answer No

Document Name

Comment

ACP does not have a recommendation on this question beyond the points made elsewhere in these comments.

Likes 0

Dislikes 0

Response

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3

Answer No

Document Name

Comment

MidAmerican Energy Company supports MRO NSRF comments

Likes 0

Dislikes 0

Response

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5

Answer No

Document Name

Comment

We recommend that any retrofitting of existing generating units (recommendation b) be handled by the state jurisdictions, instead of incorporating into any NERC reliability standards. Otherwise, entities may be in a position where they must retrofit their unit to comply with a NERC requirement, but the costs associated are not approved by their state jurisdiction.

Likes 0

Dislikes 0

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO

Answer No

Document Name

Comment

MPC supports comments submitted by the MRO NERC Standards Review Forum (NSRF).

Likes 0

Dislikes 0

Response

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

Answer	No
Document Name	
Comment	
Southern Company recommends that the SDT ensure that standard requirements are written to accomplish the desired results in the most cost-effective manner.	
Likes 0	
Dislikes 0	
Response	
Michael Johnson - Pacific Gas and Electric Company - 1,3,5 - WECC, Group Name PG&E All Segments	
Answer	No
Document Name	
Comment	
At this point in the SAR development, PG&E cannot make a determination on alternatives or the cost effectiveness of the recommendations.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	No
Document Name	
Comment	
No additional comments	
Likes 0	
Dislikes 0	
Response	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	No
Document Name	

Comment

Alliant Energy supports the comments submitted by the MRO NSRF.

Likes 0

Dislikes 0

Response

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer

No

Document Name

Comment

MRO NSRF recommends item 2 (page 3 of the SAR) be stricken from the scope of the SAR. The cost to design new or retrofit existing generators based on an unknown, specified ambient temperature could require extensive investment and cost. MRO NSRF also questions how this would be audited by NERC as generators are complex machines and may fail to start, experience a derate, etc., for various reasons during extreme cold weather, including times where the root cause may not be due to cold weather conditions.

The current FERC/NERC Joint Inquiry report and all preceding reports related to cold-weather events contain many recommendations. Inasmuch, MRO NSRF encourages NERC to proceed systematically through these recommendations, as many are dependent on each other. **Due to the short timeframe and the number of recommendations that will be addressed under the scope of this SAR**, rather than have one large standards development project, **MRO NSRF recommends NERC form several Standard Drafting Teams to accomplish this task in an efficient manner. MRO NSRF recommends this be done using the existing SAR, avoiding the need to create multiple SARs, similar to what was done under the umbrella SAR for Project 2016-02: Modifications to CIP Standards.** MRO NSRF recommends the SAR batch like concepts together and break the project into the following segments:

1. Generator Owner, Generator Operator and Balancing Authority SDT Project:

- Item 1 (page 3 of the SAR)
- Item 3 (page 3 of the SAR)
- Item 4 (pages 3-4 of the SAR)
- Item 5 (page 4 of the SAR)
- Item 6 (page 4 of the SAR)

2. Load Shedding and Demand Response SDT Project:

- Item 7 (page 4 of the SAR)
- Item 8 (page 4 of the SAR)
- Item 9 (page 4 of the SAR)

3. Future SDT Project:

- Item 2 (page 3 of the SAR); see comments below for further information

Likes 0

Dislikes 0

Response

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

Answer No

Document Name

Comment

None.

Likes 0

Dislikes 0

Response

Susan Sosbe - Wabash Valley Power Association - 1,3

Answer No

Document Name

Comment

We appreciate that NERC is evaluating revising specific Standards and not adding another Standard specific to Cold Weather Preparedness, which would have overlapping requirements with existing Reliability Standards. We hope there will be a Risk Assessment associated with these revisions based upon unit size, location, etc. as Plans for small units may not need to be as extensive as for large units, or for units in parts of the country with a high probability of severe freeze impacts.

Likes 0

Dislikes 0

Response

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC Regional Standards Committee no NGrid

Answer No

Document Name

Comment

Likes 0

Dislikes 0

Response

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

Answer No

Document Name

Comment

Likes 0

Dislikes 0

Response

Alan Kloster - Evergy - 1,3,5,6 - MRO

Answer No

Document Name

Comment

Likes 0

Dislikes 0

Response

Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,3,5

Answer No

Document Name

Comment

Likes 0

Dislikes 0

Response

Kenisha Webber - Entergy - Entergy Services, Inc. - NA - Not Applicable - SERC

Answer No

Document Name

Comment

Likes 0

Dislikes 0

Response

Keith Jonassen - ISO New England, Inc. - 2 - NPCC

Answer

No

Document Name

Comment

Likes 0

Dislikes 0

Response

Natalie Johnson - Enel Green Power - 5

Answer

Yes

Document Name

Comment

Interregional planning studies should evaluate the most cost effective approach to promote the desired resiliency, with criteria set out by FERC for a minimum level of resilience (on a probabilistic basis). Transmission (which has other known benefits that would also need to be included) should be compared to generator weatherization (including blended generation along with transmission approaches). The most cost effective approach should be considered for each Region (and sub-region where geographic diversity is significant). If generator weatherization upgrades are required, these should be viewed as a recoverable expense to load, similar to how reliability upgrades to the transmission system are billed to load.

Another option is to provide market incentives that would urge Generator Owners to implement cold weather enhancements. Similar to other market incentives to provide grid reliability services such as Black Start or Ancillary Services, Generators that are able to operate to certain ambient temperatures could be paid a premium for that service thereby covering the cost for their investments and the costs of providing this reliability service.

Enel North America, Inc.'s Texas solar facility did not experience icing or ambient temperature problems during the 2021 February event. During the event, the site was taken offline due to cold weather issues with the interconnecting transmission line. The design and configuration of Enel North America, Inc.'s solar site enabled its facility to perform well during this February event. The solar site performed well due to the following attributes:

- Solar PV modules have operating ranges from -40C to +85C. Most inverters will derate at around +45C to +50C.
- All systems are tilted to have the optimal angle to the sun. The tilting promotes ice and snow melt and is therefore self-cleaning. The tilting is already a design feature for solar panels that aids in shedding snow and ice.
- All solar plants must be designed to comply with ASCE 7 wind loads, which are defined by a 3-second wind gust, at 33ft above ground with a 300-year return period. This wind speed varies with location, and ranges from 95 to 107 mph for the Texas region.
- Enel North America, Inc.'s solar fleet utilizes bifacial module technology, which can produce power even when the top of the panels is covered. This allows for electrical current flow, and subsequently creates heat that aids in clearing panels of ice and snow.

Different fuel types have different strengths and the above attributes of solar farms that have these design features could be part of the solution to cold weather events.

Demand Response

Demand Response provides numerous benefits to the grid, including reducing the likelihood of blackouts and reducing every-day reliance on fossil fuel generators. Therefore, it is to the grid's best interest to allow for as much demand response participation to the extent it does not threaten reliability.

Curtailment Service Providers ("CSPs") enable end-use retail customers participation in wholesale market demand response programs. CSPs with critical natural gas infrastructure customers understand the concerns raised by FERC/NERC but offer alternative options to mitigating reliability shortcomings without fully banning participation of these customers in Demand Response programs.

- First, in place of a prohibition, NERC should instead require facilities with critical gas infrastructure to demonstrate that they are not signed up for demand response programs during cold weather months. Critical natural gas facilities that participate in demand response programs already opt-out of demand response participation in cold weather months due to the potential for freezing and reliability issues. Critical natural gas facilities can make this demonstration as part of the reporting requirements in the recommendation for critical natural gas facility reporting outlined on page 18 of the FERC/NERC Cold Weather Report.
- Second, any ban on natural gas facilities participating in Demand Response programs should apply only to what is critical to maintaining natural gas supply.
 - Multiple loads may be behind one Electric Service Identifier associated with a natural gas facility and not all of them are critical to maintaining supply. Non-critical loads should therefore still be allowed to participate in DR programs.
 - Any BA considering such a rule should first execute a survey of natural gas facilities in their footprint to determine what loads are critical to natural gas supply. This type of assessment is currently underway in Texas by the State PUC and Railroad Commission (RRC).
 - During the February 2021 cold weather event in Texas, a majority of the natural gas that was curtailed was due to utility rolling blackouts that shut off power to natural gas facilities. A full accounting of load critical gas facilities to maintaining adequate natural gas supply would have prevented this.
- Third, BAs should consider the difference in load shedding requirements for different types of Demand Response programs.
 - For example, Demand Response participation in PJM's Synchronized Reserve Market ("SRM") only requires load shedding for a maximum of 30 minutes (average of 9 minutes). For a natural gas compressor station, this short of a duration would not result in a sustained drop in pressure that could lead to a freezing event as was seen in Texas.
 - Furthermore, since compressor stations often carry a large electric load, their participation in the SRM is critical to support to the PJM electric grid during unexpected system disruptions.
 - Therefore, participation via demand response of critical natural gas infrastructure should not be prohibited in markets that require short dispatch times such as PJM's SRM.
- Lastly, BAs should allow critical natural gas facilities from participating in demand response programs during warmer months when the probability of a freezing event is near zero.
 - A full survey of how critical natural gas facilities participate in demand response programs would show that these companies are already choosing not to use load critical to their gas supply during cold weather. Contributing to the reliable delivery of natural gas is sole focus of these facilities. The risks and financial penalties of failing to meet their obligations due demand response program are severe.
 - Placing seasonal limitations on these facilities participating in demand response programs would be codifying a practice that is already commonplace.

Given the many benefits demand response can provide the grid and the various ways in which critical natural gas facilities participate in demand response programs, Enel North America, Inc. recommends that any final recommendations on the topic ask for further studying of the issue in place of a comprehensive prohibition.

Likes 0

Dislikes 0

Response

Travis Fisher - Electricity Consumers Resource Council (ELCON) - 7

Answer Yes

Document Name

Comment

ELCON recommends that NERC review each proposed change to its standards to ensure consistency with—or at least avoid conflict with—local, state, and regional policies under development. For example, in State Bill 3, Texas required that its Public Utilities Commission (PUCT) implement winter weatherization requirements, and the PUCT in October issued new 16 Texas Administrative Code §25.55 relating to weather emergency preparedness. Although ELCON agrees with FERC and NERC that the Event was unacceptable and that regulatory changes must be implemented, NERC should take care to align with and not to disrupt the important changes already established by local, state, and regional policymakers.

Likes 0

Dislikes 0

Response

Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC

Answer Yes

Document Name

Comment

BPA supports the comments made by the US Bureau of Reclamation.

Likes 0

Dislikes 0

Response

LaKenya VanNorman - Florida Municipal Power Agency - 3,4,5,6 - SERC

Answer Yes

Document Name

Comment

FMPA supports TAPS (Transmission Access Policy Study Group) comments

Likes 0

Dislikes 0

Response

Dana Showalter - Electric Reliability Council of Texas, Inc. - 2

Answer Yes

Document Name

Comment

ERCOT believes that splitting this effort into multiple projects distinguished by concepts, as suggested by the SRC, would allow for more targeted teams that have appropriate expertise.

Likes 0

Dislikes 0

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer Yes

Document Name

Comment

SAR Recommendation #2

The NAGF believes that existing generation facilities should not be mandated to retrofit/upgrade equipment to operate in extreme weather conditions. Such retrofits can be very expensive and not economically feasible for certain facilities, causing them to be retired rather than investing in such retrofits/upgrades. Therefore, the NAGF recommends that existing generation facilities be provided the flexibility to revise their extreme weather temperature information given existing equipment capabilities and operating experience.

Likes 1 Platte River Power Authority, 5, Archie Tyson

Dislikes 0

Response

Gul Khan - Oncor Electric Delivery - 1 - Texas RE

Answer Yes

Document Name

Comment

Oncor recommends that the above items 1.g. and 1.i. would be more appropriately addressed through the development of a Reliability Guideline that provides an in-depth assessment and discussion of load shed considerations. Each system is different and will have varying constraints that must be considered in the development of load shed procedures. A blanket and "one-size-fits-all" approach likely will not achieve the end goal of having entities understand the nuances/capabilities of their system and develop necessarily adaptable load shed procedures that fit a variety of circumstances. The

development of a Reliability Guideline on this topic will allow for the documentation of the “why” so that entities can appropriately understand and adopt meaningful changes to their load shed procedures that address their individual constraints.

Likes 0

Dislikes 0

Response

Rebecca Baldwin - Transmission Access Policy Study Group - NA - Not Applicable - NA - Not Applicable

Answer

Yes

Document Name

Comment

Recommendation 1b (“Generator Owners are to design new or retrofit existing generating units to operate to a specified ambient temperature and weather conditions. . . . The specified ambient temperature and weather conditions should be based on available extreme temperature and weather data for the generating unit’s location, and account for the effects of precipitation and accelerated cooling effect of wind”) does not indicate which entity should determine the “specified ambient temperature and weather conditions.” This responsibility should lie with the Generator Owner: each GO should determine the conditions to which it can economically retrofit each generating unit, in light of available extreme weather and temperature data, and inform its BA of its limitations. The BA can then plan accordingly. GOs’ decisions regarding the conditions to which they retrofit or design their units may well have implications for capacity markets, resource adequacy requirements, etc. Any such market and resource adequacy implications, however, are explicitly beyond NERC’s purview, and must be addressed by entities with responsibility for those areas.

The alternative—charging a different entity, such as the BA or RC, with determining the specified ambient temperature and weather conditions—may be superficially appealing, but TAPS is concerned that doing so would aggravate resource adequacy issues by causing the retirement of economically marginal generators that could otherwise continue to provide reliable service under most weather conditions. So long as entities with planning responsibilities are aware of and account for generators’ limitations, it is better to have a generator that can reliably operate in *most* weather, than to lose that generator in *all* weather.

TAPS notes as well that, even aside from the counterproductive effect noted above, designating the local record low as the “specified ambient temperature” for all generators is not a reasonable solution: given current weather trends, records may well change over the life of a generator. A reliability standard should not force every generator to undergo another round of retrofitting each time a new record is set; those decisions should be made on a case-by-case basis in light of the then-current generation mix and winter capacity needs of the region.

Likes 0

Dislikes 0

Response

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

Answer

Yes

Document Name

Comment

We believe the only alternative that would also address the findings of the joint inquiry would be to leverage the recently FERC approved EOP-011-2 that will require Generator Owners to implement and maintain one or more cold weather preparedness plan(s), including freeze protection measures, inspection and maintenance, cold weather data and operating limitations, and training. EOP-011-2 already covers many of the inquiry recommendations and becomes effective in 2023.

Likes 0

Dislikes 0

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5,6

Answer

Yes

Document Name

Comment

NRG Energy Inc is in agreement with the NAGF's position as stated:

The NAGF Forum believes that existing generation facilities should not be mandated to retrofit/upgrade equipment to operate in extreme weather conditions. Such retrofits can be very expensive and not economically feasible for certain facilities, causing them to be retired rather than investing in such retrofits/upgrades. Therefore, the NAGF recommends that existing generation facilities be provided the flexibility to revise their extreme weather temperature information given existing equipment capabilities and operating experience.

NRG Energy Inc. would like to submit additional comments regarding seasonal mothball units that are not operated during winter periods. The SDT should consider exemptions for those units regarding retrofits if these units are removed from service for operation in the winter periods. In addition, retrofits require outages to implement the required freeze protection which would be taken during high load periods to meet the standard enforcement dates. This further decreases reliability of the grid at a time it is needed most.

Likes 0

Dislikes 0

Response

Jennie Wike - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6 - WECC, Group Name Tacoma Power

Answer

Yes

Document Name

Comment

As noted in Tacoma Power's comments to item 1b, using a risk-based tiered approach would be a more cost effective solution than prescribing specific modifications. Those entities that perform an assessment and do not identify vulnerabilities would not be required to implement corrective actions, thus eliminating additional burden. Additionally, those entities who perform an assessment and determine that extreme cold weather events are not feasible for their region would not be required to perform any further actions.

This risk-based approach would ensure that vulnerabilities are identified at facilities that experience cold weather while minimizing burden to those facilities who do not have vulnerabilities or cold weather climates.

Likes 0

Dislikes 0

Response

Sean Bodkin - Dominion - Dominion Resources, Inc. - 3,5,6, Group Name Dominion

Answer

Yes

Document Name

Comment

A number of the proposed reliability standard modifications are more appropriate to tariffs or market rules.

Likes 0

Dislikes 0

Response

George Brown - Acciona Energy North America - 5

Answer

Yes

Document Name

Comment

The FERC/NERC Joint Inquiry report and all preceding reports related to cold-weather operations contain many recommendations. Inasmuch, Acciona Energy encourages NERC to proceed systematically through these recommendations, as many are dependent on each other. Rather than have one large standards development project, Acciona Energy recommends the following Standard Drafting Team projects:

1. Generator Owner/Operator & Balancing Authority SDT Project:

- FERC/NERC Joint Inquiry report, Key Recommendation 1a, SAR Recommendation 1, item 1a of this Comment Form,
- FERC/NERC Joint Inquiry report, Key Recommendation 1c, SAR Recommendation 6, item 1f of this Comment Form
- FERC/NERC Joint Inquiry report, Key Recommendation 1d, SAR Recommendation 4, item 1d of this Comment Form
- FERC/NERC Joint Inquiry report, Key Recommendation 1e, SAR Recommendation 3, item 1c of this Comment Form, and
- FERC/NERC Joint Inquiry report, Key Recommendation 1g, SAR Recommendation 5, item 1e of this Comment Form.

2. Load Shedding & Demand Response SDT Project:

- FERC/NERC Joint Inquiry report, Key Recommendation 1h, SAR Recommendation 8, item 1h of this Comment Form,
- FERC/NERC Joint Inquiry report, Key Recommendation 1i, SAR Recommendation 7, item 1g of this Comment Form, and
- FERC/NERC Joint Inquiry report, Key Recommendation 1j, SAR Recommendation 9, item 1i of this Comment Form.

3. Future SDT Project:

- FERC/NERC Joint Inquiry report, Key Recommendation 1f, SAR Recommendation 2, item 1b of this Comment Form. Please see comments below for further information.

Likes 0

Dislikes 0

Response

Michael Krum - Salt River Project - 1,3,5,6 - WECC

Answer

Yes

Document Name

Comment

No Comment.

Likes 0

Dislikes 0

Response

Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6

Answer

Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Adrian Raducea - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy - DTE Electric

Answer

Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee

Answer

Document Name

Comment

The current FERC/NERC Joint Inquiry report and all preceding reports related to cold-weather events contain many recommendations. Due to the short timeframe and the number of recommendations that will be addressed under the scope of this SAR, rather than have one large standards development project, the IRC SRC recommends NERC form several Standard Drafting Teams (SDTs) to accomplish this task in an efficient manner. The IRC SRC recommends this be done using the existing SAR, avoiding the need to create multiple SARs, similar to what was done under the umbrella SAR for Project 2016-02: Modifications to CIP Standards. Finally, IRC SRC recommends the SDT consider batching like concepts together and breaking the SAR into the following segments:

1. Generator Owner, Generator Operator and Balancing Authority SDT Project:

- Item 1 (page 3 of the SAR)
- Item 2 (page 3 of the SAR) if retained
- Item 3 (page 3 of the SAR)
- Item 4 (pages 3-4 of the SAR)
- Item 5 (page 4 of the SAR)
- Item 6 (page 4 of the SAR)

2. Load Shedding and Demand Response SDT Project:

- Item 7 (page 4 of the SAR)
- Item 8 (page 4 of the SAR)
- Item 9 (page 4 of the SAR)

3. Future SDT Project:

- see comments below for further information

Likes 0

Dislikes 0

Response

Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro

Answer

Document Name

Comment

BC Hydro does not have a position in response to the SDT's question and an associated recommendation for alternatives at this time.

However, BC Hydro suggests that part of implementing these recommendations, criteria and/or guidelines (implementation and/or compliance) to help define an Extreme Cold Weather condition be also developed. Geographical location, historical vs. forecast data, statistical-based design conditions, etc. can have a great impact when it comes to operationalization of these new Reliability Standard Requirements.

Likes 0

Dislikes 0

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer

Document Name

Comment

Texas RE does not have comments on this question.

Likes 0

Dislikes 0

Response

Carl Pineault - Hydro-Quebec Production - 1,5

Answer

Document Name

Comment

No comments

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Xcel Energy supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Reclamation identifies that extreme cold weather has only caused problems in areas that rarely experience such weather and are therefore not normally prepared for such conditions. Reclamation observes that continent-wide requirements to address regional phenomena are overly burdensome for regions that normally experience extreme cold weather and create an unnecessary administrative burden for entities in those regions to create compliance documentation of normal business operations.

Reclamation also recommends that future cold weather modifications be fully scoped to avoid constant churn of reliability standards. Specifically, Reclamation observes that none of the recommendations pertain to cold weather preparations for transmission systems.

Likes 0

Dislikes 0

Response

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

Adrian Raducea - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy - DTE Electric

Answer

Document Name

Comment

Create a stand alone NERC Reliability Standard for Extreme Cold Weather Grid Operations, Preparedness, and Coordination instead of revising multiple NERC Standards except place the training requirements in PER-006-1.

Likes 0

Dislikes 0

Response

Susan Sosbe - Wabash Valley Power Association - 1,3

Answer

Document Name

Comment

Thank you for the opportunity to comment.

Likes 0

Dislikes 0

Response

Patti Metro - National Rural Electric Cooperative Association - 3,4

Answer

Document Name

Comment

NRECA, on behalf of the Cooperative Sector, supports the need for the SAR Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination. The Cooperative Sector recognizes the importance of expeditiously taking action to implement the recommendations in the Joint FERC/NERC Inquiry Final Report on the February 2021 Freeze event. NRECA will work with its members to provide technical input during the standards development process.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

None.

Likes 0

Dislikes 0

Response

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer

Document Name

[Copy of MRO NSRF_Proposed Standard Placement_Cold Weather Recommendations_MATRIX_12-07-21.xlsx](#)

Comment

MRO NSRF notes that the recommendations contained within the Cold Weather Joint Inquiry report are merely that, recommendations. In light of the fact that there is no FERC directive, NERC should prioritize and evaluate each of the recommendations from the report and move forward only with those recommendations truly needed to support BES reliability. By simply taking all of the recommendations at face value and asking “what Standard does it belong in” makes everything a priority. This approach has not worked well in the past as evidenced by the SER and P81 projects.

In addition, as the SAR sets the scope of a project in accordance with the ANSI process as agreed upon by industry, MRO NSRF asks that NERC and the SAR Drafting Team consider the following comments:

- Regarding item 1 (page 3 of the SAR)

MRO NSRF is concerned about the use of the term ‘protect.’ Some of the examples provided in the Joint Inquiry report for cold-weather-critical components (footnote 261) cannot be ‘protected’ against certain cold weather ambient conditions.

To address this, MRO NSRF suggests a language change in the SAR to recognize and allow for this circumstance; i.e. to protect or otherwise provide criteria as to why a cold-weather critical component cannot be protected against certain cold weather ambient conditions.

- Regarding item 2 (page 3 of the SAR)

As noted in our response to question 1b above, MRO NSRF recommends removing this recommendation from the SAR.

A methodical approach needs to be taken to address this recommendation as it has the potential to oppose or discourage local, state and national energy objectives. As this recommendation is currently written, it has the potential to thwart progress of other recommendations that would have a more immediate positive effect on reliability. Further, this recommendation is linked to the FERC/NERC Joint Inquiry report, Key Recommendation 2, which requires a project with participation beyond NERC stakeholders.

- Regarding item 4 (pages 3-4 of the SAR)

MRO NSRF recommends modifying the recommendation language so that Corrective Action Plans are only developed and implemented when a generating unit experiences an outage, failure to start or derate when the conditions identified in NERC Reliability Standard EOP-011-2 Emergency Preparedness and Operations, Requirement R7.3. et al. (or its successors; e.g. if this language is transitioned to an FAC standard) are not met.

Finally, MRO NSRF provides a corresponding summary of the above recommendations as a table submitted as attachment, "MRO NSRF_Proposed Standard Placement_Cold Weather Recommendations_MATRIX_12-07-21.xlsx."

Likes 0

Dislikes 0

Response

Michael Krum - Salt River Project - 1,3,5,6 - WECC

Answer

Document Name

Comment

No Comment.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Reclamation disagrees with continent-wide reliability requirements to address cold weather preparation. The problem with continent-wide cold weather requirements is the universal application of a compliance burden to solve a problem that only exists in a limited geographic area and is limited to certain types of generation facilities. Information to identify these areas and facilities should be available in the GADS database.

Different geographic locations require different levels of cold weather preparation. Entities in geographic locations that commonly experience cold weather may already have adequate preparations in place but are now required to provide extra documentation of these preparations simply to support compliance. This is an administrative burden that does not directly improve reliability and is therefore inappropriate for continent-wide requirements.

Reclamation recommends entities that are already inherently protected against cold weather do not need reliability requirements for cold weather protections. Entities that are *not* inherently protected against cold weather need clear, definitive requirements to ensure electric reliability during extreme

cold weather. This objective is appropriately achieved by regional reliability standards or by excluding certain geographic locations and/or certain types of generators.

Cold weather is seasonal and expected. Cold weather losses historically do not occur in areas that are accustomed to annual freezing temperatures. For areas of the country and types of generators that routinely prepare for and experience cold weather, requirements to document plans and provide training are administrative and financial burdens with low potential for increases to reliability. Regional requirements that target affected generation types and localities would be more economical and effective than continent-wide requirements. Specific regional requirements would better address the issues seen in the areas that have been affected.

Hydroelectric plants already have local cold weather plans (e.g., seasonal plants, water restrictions due to temperature, etc.) and have been operating reliably in various extreme temperature bands for over 100 years. Reclamation recommends excluding hydroelectric generators from cold weather requirements as they are secured inside climate-controlled buildings and rely on water operations, for which cold weather considerations are already accounted by local operations and maintenance procedures. Reclamation recommends limiting the applicability of cold weather requirements to entities located in geographic areas that don't normally see harsh winter conditions.

Reclamation recommends the SDT consider modifications to address the bigger picture, which is extreme conditions in general. If other extreme operating conditions are addressed simultaneously with cold weather conditions, it will alleviate the churn caused by the current cold weather modifications.

Likes 0

Dislikes 0

Response

George Brown - Acciona Energy North America - 5

Answer

Document Name

Comment

Acciona Energy provides the following additional comments on the recommendations from the FERC/NERC Joint Inquiry report.

- The FERC/NERC Joint Inquiry report, Key Recommendation 1a, SAR Recommendation 1, item 1a of this Comment Form.

Acciona Energy is concerned about the use of the term 'protect' in this recommendation. Some of the examples provided (footnote 261) in the Joint Inquiry report for cold-weather-critical components cannot be 'protected' against certain cold weather ambient conditions.

Acciona Energy would suggest a language change to the SAR from 'protect' to 'protect or if unable to protect, if near-term conditions are predicted to be met that would render this cold-weather-critical component unavailable, such unavailability of this cold-weather-critical component shall be reflected in the generating capacity that can be relied on'.

- The FERC/NERC Joint Inquiry report, Key Recommendation 1f, SAR Recommendation 2, item 1b of this Comment Form.

Acciona Energy recommends removing this recommendation from this SAR.

A methodical approach needs to be taken to address this recommendation as it has the potential to oppose or discourage local, state and national energy objectives. As this recommendation is currently written, it has the potential to thwart progress of other recommendations that would have a more immediate positive effect on reliability. Further, this recommendation is linked to the FERC/NERC Joint Inquiry report, Key Recommendation 2, which requires a project with participation beyond NERC stakeholders.

- The FERC/NERC Joint Inquiry report, Key Recommendation 1d, SAR Recommendation 4, item 1d of this Comment Form.

Acciona Energy recommends modifying the recommendation language so that Corrective Action Plans are only developed and implemented when a generating unit experiences an outage, failure to start or derate when the conditions identified in NERC Reliability Standard EOP-011-2 Emergency Preparedness and Operations, Requirement R7.3. et al. are not met.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Alliant Energy supports the comments submitted by the MRO NSRF.

Likes 0

Dislikes 0

Response

Keith Jonassen - ISO New England, Inc. - 2 - NPCC

Answer

Document Name

Comment

None

Likes 0

Dislikes 0

Response

Sean Bodkin - Dominion - Dominion Resources, Inc. - 3,5,6, Group Name Dominion

Answer

Document Name

Comment

Dominion Energy supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

Michael DePalma - Onward Energy - NA - Not Applicable - MRO,WECC,Texas RE,NPCC

Answer

Document Name

Comment

For each weatherization standard modification, we request the following be considered:

Focus additional requirements and punitive measures on those GO/GOPs that have not shown compliance with existing weatherization standards;

Address natural gas suppliers' ability to get product to market; with adequate fuel stock availability much of the outages seen in February 2021 could have been avoided;

Interconnection between regions (e.g. TRE and others) may be incentivized through NERC reliability standards, which would allow for improved energy flow to areas where it is needed during emergencies

Likes 0

Dislikes 0

Response

Carl Pineault - Hydro-Quebec Production - 1,5

Answer

Document Name

Comment

HQP hydro production groups are located where extremely cold ambient temperatures often occur during winter periods. Specific Design requirements are intrinsically implemented to ensure that extreme ambient temperature does not affect production.

Likes 0

Dislikes 0

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter

Answer

Document Name

Comment

N/A

Likes 0

Dislikes 0

Response

Thomas Foltz - AEP - 3,5,6

Answer

Document Name

Comment

AEP appreciates the perceived urgency of the proposed SAR and the recommendations and concerns which drove it, however we do not believe that the SAR's obligations suggested by recommendations #1 through #6 are necessary for inclusion within new or revised NERC standards. The Requirements suggested by Recommendations 1, 3, 4, 5, and 6 are addressed at a high level in the recently approved cold weather standards from Project 2019-06. We believe what is being suggested by this SAR's recommendations is already being planned and executed as a result of developing cold weather plans. Recommendation 2 may be reasonable to implement for new installations or modifications to existing facilities, provided that the standard design criteria is clear and consistent over time. Part of Recommendation 2 is related to the retrofitting of existing units to meet new cold weather standards, and this may not be a realistic expectation based on the design and age of some units. This needs to be investigated further to see if it is even feasible to so do. If it *is* determined to be feasible, industry would need sufficient time and opportunity make the necessary changes. We believe the plan for the existing units should instead revolve around corrective action plans for identified weaknesses, as opposed to a wholesale unit design basis change. In summary, we do not believe the strategy envisioned for those obligations would be a prudent or effective way to address those concerns.

Project 2019-06 resulted in new obligations within TOP-003, IRO-010, and EOP-011, and addressed Cold Weather preparedness, plans, procedures, and awareness. AEP fully supported the efforts of this project, and cast affirmative ballots driven by that support. The benefits of these new obligations have yet to be fully realized, and though they were not drafted to specifically address the February 2021 events, we believe that they will prove very beneficial when fully implemented. AEP recommends not pursuing the proposed SAR for Project 2021-07, and instead, allow opportunity for the new obligations drafted under Project 2019-06 to yield their full effect.

There may be potential benefits in pursuing recommendations #7 through #9 for both the reliability of the BES and for the customer as well. A major obstacle in pursuing them however, is the challenge of achieving true visibility of critical gas infrastructure loads, especially from a Transmission Operator point of view. For example, while the Distribution Provider does have the means to identify some of these facilities as part of the service connection process, there may also be details of which they would not be aware. For example, they may not know a) the degree to which the gas supply is non-firm only, b) if gas compressor backups are available or c) what the affect might be of losing multiple compressor stations along the pipelines. Also, the GO would need to work with their gas suppliers to identify the risk to their plants for the loss of the pipeline electrical supply. The complexity of these contracts among gas suppliers and the risk to the generation needs to be the responsibility of the generator or following BA processes (which don't presently exist) to clearly communicate to the Distribution Provider and/or the TOP. A number of self-reporting mechanisms and ties would be integral for this information to flow appropriately, but these mechanisms do not currently exist. At the very least, any obligations driven by

Recommendation #7 would need to include the Distribution Provider and Generator Owner.

Minimum system operating specifications and thresholds at the generator level could be explicitly stated within new or revised interconnection agreements. These agreements might be the appropriate mechanism, along with ongoing improvements being made to FAC-001 and FAC-002, rather than within NERC Standards obligations for such commitments to be met. In addition, it should be noted that unit-hardening techniques cannot be generalized across all units, as this would not be an effective approach. Rather, these should be determined on a unit-specific basis.

The degree to which an individual unit is hardened is not the sole guarantor of success. If those hardened units are not available or do not have reserve or emergency resource capacity, they could not be called upon as inferred by this SAR. The configuration of the system, i.e. what facilities are in or out of service, and system operating limits and how close you are to them will all play a crucial role.

AEP believes many entities are currently following prudent, localized strategies in preparing for cold weather, and are already incentivized by the market to develop and execute prudent procedures based on existing market demands. Any entities who did not already have prudent procedures in place will certainly be mandated to do so by the obligations developed in Project 2019-06. Rather than the course proposed in the draft SAR, AEP believes the best path forward involves the RTOs (presumably serving as the Balancing Authority) working directly with generating entities within their footprint, and to follow up with them individually and directly when issues are identified. RTOs are in the best position to provide this service, as they fully understand the system constraints, geography, weather patterns, and customers for their area. RTOs often provide their own guidance in this regard, for example, PJM's Manual 14D Attachment N: Cold Weather Preparation Guideline and Checklist. This is one of several guidance documents that is already available, and which emphasizes the reviewing of lessons learned after each event and implementations of defenses to prevent recurrence. Once in place, this creates an ongoing effort that focuses improvements in areas of specific need that directly translate to continual improvement of the process that is in place. In addition, we are seeing that REs are heading in a similar direction as well. AEP believes these established processes have proven their effectiveness, and will continue to be valuable going forward. Not only does this relationship between the RTOs and their generating entities help to develop prudent preparatory steps in regard to cold weather, it also allows the RTO to work more closely with those generators who may need to improve the methods they already have in place. Such a working relationship naturally fosters a good communication between the generator and the BA and/or RC which we believe is the spirit behind this new SAR. Rather than pursue rule making that applies to all entities, many of which have prudent cold weather procedures already in place, RTOs should instead work more closely with those entities where additional effort may need to be made. By doing so, the RTOs can more accurately determine exactly what deficiencies need to be addressed within these specific entities, and recommend appropriate entity-specific strategies accordingly.

The content of this proposed SAR was developed solely in response to the preliminary version of the findings and recommendation document, and its recommendations and timelines do not always correlate with the final version of the findings and recommendation document (including some implementation timeframes which are shorter in the draft SAR than in the final version of the findings and recommendations document). In addition, the draft SAR and request for industry comment was made less than a week after the final findings and recommendations were issued. We believe NERC and the future Standards Drafting Team would have been much better served if the SAR authors would have withheld the proposed draft SAR until it had been updated to reflect the final findings and recommendations. In addition, industry has not had sufficient opportunity to review the final findings and recommendations, which may prove problematic in providing quality, substantive industry feedback on the SAR. While issuing the draft SAR without taking the final findings and recommendations into account, and requesting those comments before the holidays, might both appear to be a short term benefit in terms of expediency, we believe it may negatively impact the effectiveness of the project in the long term. The future Standards Drafting Team will need ample, high quality feedback to perform their work and we are concerned that the compressed timeline for providing feedback will be problematic for them.

Likes 0

Dislikes 0

Response

Patricia Lynch - NRG - NRG Energy, Inc. - 5,6

Answer

Document Name

Comment

NRG Energy Inc is in agreement with the NAGF's position as stated:

The NAGF presents the following comments for consideration:

- a. The NAGF supports the recommendation that new generation facilities be designed to operate to historical wind chill temperature and precipitation worst-case conditions, but does not believe existing generating units should be required to upgrade equipment to meet these criteria.*
- b. Generator Owners and Generator Operators should not be required to perform fuel supply risk analysis as fuel supply is out of Generators' control and responsibility and logically belongs to the fuel suppliers.*
- c. Pre-starting generation facilities prior to the onset of cold weather events will help ensure resources are on-line and available to serve load.*
- d. NRG Energy Inc. offers suggestions to Recommendation 6 as there is ambiguity related to impact of precipitation related to minimum operating temperature. NRG recommends that further clarification is provided to the industry regarding this.*
- e. NRG Energy Inc. has concerns about consistency in defining minimum operating temperature across the specific regions. NRG Energy Inc would like the SDT to consider how will this be implemented and managed.*
- f. NRG Energy Inc. has a question to the SDT on Recommendation #5 concerning projection of capacity that is at risk due to fuel supply and weather. Will there be sanctions if projections are off? Who will be accountable and how will this be enforceable?*

Likes 0

Dislikes 0

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer

Document Name

Comment

Texas RE appreciates and supports the drafting team's effort on this project. Texas RE noticed that some of the recommendations in the Joint Inquiry are not present in the SAR. Texas RE recommends incorporating the following Key Recommendations from the Joint Inquiry specifically into the SAR:

- Key Recommendation 1b - Texas RE understands this recommendation to be related to Key Recommendation 1a.
- Key Recommendation 4 - Texas RE strongly recommends Key Recommendation 4 be included in the SAR. Consistent with this recommendation, Texas RE believes the drafting team should specify that GOs should implement one or more cold weather preparedness plans "*seasonally prior to the expected onset of winter conditions, and review annually.*" This will clarify that timely preparation and implementation of winter weather protections should occur in advance of potential cold weather events, including actions that could require longer lead-times.
- Key Recommendation 8 - Texas RE recommends this be included in the SAR since the Joint Inquiry Report states "this recommendation is a necessary predecessor to Key Recommendation 1h".
- Key Recommendation 9 - Texas RE further recommends the SAR drafting team consider including this recommendation as a planning requirement.

The drafting team may also wish to consider standard implications of Key Recommendations 10-23.

Likes 0

Dislikes 0

Response

Michael Johnson - Pacific Gas and Electric Company - 1,3,5 - WECC, Group Name PG&E All Segments

Answer

Document Name

Comment

PG&E has participated in the preparation and supports the comments provided by the Edison Electric Institute (EEI) for Q3.

PG&E also supports the "GENERAL COMMENTS" (text and 3 bullets) provided by the EEI related to the "following observations that should be addressed to avoid unintended and possibly harmful consequences to grid reliability".

Likes 0

Dislikes 0

Response

Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro

Answer

Document Name

Comment

BC Hydro notes other extreme weather conditions, such as extremely high temperatures, widespread forest fires and extremely dense smoke, extreme wind and extreme precipitations. BC Hydro suggest that there might be an opportunity to consider these broader impacts in addition to extreme cold weather impacts.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

In keeping with the NERC standard efficiency review, where possible, a single cold-weather related standard would be more efficient and effective from a creation and implementation perspective. Some items listed would be applicable for all seasons such as the questions (1g, 1i, 1h) and could be easily included in the existing applicable standards.

Likes 0

Dislikes 0

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO

Answer

Document Name

Comment

MPC supports comments submitted by the MRO NERC Standards Review Forum (NSRF).

Likes 0

Dislikes 0

Response

Tommy Curtis - Santee Cooper - 1,3,5,6, Group Name Santee Cooper

Answer

Document Name

Comment

Of the 9 recommendations contained in the SAR, 5 have an implementation period that begins before the FERC approved EOP-011-2 Implementation Plan. Is it the intent of the SAR's author to change the approved implementation date of April 1, 2023?

Likes 0

Dislikes 0

Response

Alan Kloster - Evergy - 1,3,5,6 - MRO

Answer

Document Name

Comment

Evergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 3.

Likes 0

Dislikes 0

Response

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5

Answer

Document Name

Comment

None

Likes 0

Dislikes 0

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

The following appear to be discrepancies between the SAR and the FERC - NERC - Regional Entity Staff- Report:

- **Key Recommendation 1a** appears to largely align with SAR Recommendation 1 but the word “protect” appears in SAR Recommendation 1 but not in Key Recommendation 1a. While this word is missing, we agree that its addition makes sense.
- **Key Recommendation 1b** appears to not be fully addressed in the SAR recommendations. While the addition of the work “protect” in SAR Recommendation 1 may have been added to address some of the language in this key recommendation, we specifically do not find any language in the SAR to address “Generator Owner should consider previous freeze-related issues experienced by the generating unit, and any corrective or mitigation actions taken in response. At an interval of time to be determined by the Balancing Authority, the Generator Owner should analyze whether the list of identified cold-weather-critical components and systems remains accurate, and whether any additional freeze protection measures are necessary.”
- **Key Recommendation 1c** aligns with the SAR Recommendation 6, however, the implementation timeframe does not align with the recommendations in the Joint Report.
- **Key Recommendation 1d** generally aligns with SAR recommendation 4 but does not require entities to apply the similar corrective action plans (CAPs) to similar equipment or require entities to provide justifications if they have not applied these CAPs to the similar equipment. Additionally, the SAR does not appear to require CAP timeframes.
- **Key Recommendation 1e** aligns with SAR Recommendation 3.
- **Key Recommendation 1f** aligns with SAR Recommendation 2 but the implementation timeframe does not align.
- **Key Recommendation 1g** aligns with SAR Recommendation 5 but the implementation timeframe does not align.
- **Key Recommendation 1h** aligns with SAR Recommendation 8 but the implementation timeframe does not align.
- **Key Recommendation 1i** and SAR Recommendation 7 somewhat align but the NERC draft SAR contains language that potentially expands the scope of this project well beyond what was proposed in the Joint Report. Specifically, the Joint report proposes to take actions that will avoid adversely affecting Bulk Electric System reliability while SAR 7 incorrectly identified the Bulk Power System, which is substantially greater in scope. We also did not see language in the SAR that:
 - Would obligate load shedding entities to request natural gas infrastructure entities to identify critical natural gas facilities; or
 - Would obligate load shedding entities to incorporate into their plans and procedures for protection against manual or automatic load shedding;or
 - Additionally, in the SAR the BA and TOP appear to have obligations that are reserved for the load shedding entities in the Joint Report.
- **Key Recommendation 1j** aligns with SAR Recommendation 9 but the implementation timeframe does not align.
- **Key Recommendation 4** does not appear to be addressed in the SAR.

Likes 0

Dislikes 0

Response

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3

Answer

Document Name

Comment

MidAmerican Energy Company supports EEI and MRO NSRF comments

Likes 0

Dislikes 0

Response

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer

Document Name

Comment

The NAGF presents the following comments for consideration:

- a. The NAGF supports the recommendation that new generation facilities be designed to operate to historical wind chill temperature and precipitation worst-case conditions, but does not believe existing generating units should be required to upgrade equipment to meet these criteria.*
- b. Generator Owners and Generator Operators should not be required to perform fuel supply risk analysis.*
- c. Pre-starting generation facilities prior to the onset of cold weather events will help ensure resources are on-line and available to serve load. The proposed actions and sharing of generator information as identified per the nine recommendations will help improve BA/TOP situational awareness of generator response and operation during cold weather events. In addition, it will allow the BAs and TOPs to make better informed decisions for starting generator units prior to cold weather events.*

Likes 0

Dislikes 0

Response

Dana Showalter - Electric Reliability Council of Texas, Inc. - 2

Answer

Document Name

Comment

ERCOT believes the SAR should provide flexibility for the drafting teams to determine where to put these new requirements—whether into existing standards or by creating new standards if necessary—rather than identifying which existing standards should be revised. When a standard is identified, the drafting team should explain why that standard was selected.

With respect to the recommendation that GOs should design their equipment to operate at a certain ambient temperature and for certain weather conditions, ERCOT notes that any standard that imposes this requirement will need to specify what entity will determine the relevant temperature or weather conditions, if the standard itself does not specify the temperature and conditions.

In relation to BA or RC requirements that may arise, ERCOT suggests that the SDT maintain the distinction that normal operations should be addressed in TOP standards while emergency operations should be addressed in EOP standards. Further, any standards that require BAs or RCs to take actions that depend on information provided by GOs, GOPs, TOs, or TOPs, should explicitly state that the action required by the BA or RC is based on the information provided to the BA or RC.

Additionally, ERCOT notes that the standard will need to specify what natural gas facilities are considered “critical natural gas infrastructure,” or how that determination will be made.

Likes 0

Dislikes 0

Response

Michele Mihelic - American Clean Power Association - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

ACP strongly reiterates the points we make in response to 1.b above.

ACP does not believe the recommendation related to retroactivity should be pursued at this time. There is insufficient information and data to inform how to address and effectively implement this recommendation. And, there are implications beyond NERC reliability standards, including to the ability of states to achieve their clean energy goals and regarding compensation for retrofits, which necessitates engagement with a broader universe of stakeholders than those involved in NERC reliability standards. As an interim step, ACP recommends that more detailed information, analysis, and data be developed to better define this approach, along with analysis on the feasibility of retrofits, commercial availability of retrofit options, cost, timeline to implement, potential for generator downtime to install, implications on design parameters for existing facilities etc. so at some point in the future, stakeholders can make a more informed decision on how to approach this recommendation. For example, what are the specific temperatures and weather conditions that need to be considered? How frequently do they occur? How consistent is the data quality across regions? How do they differ by region and by area within a region? Are there any technologically feasible, proven, and commercially available retrofit options? If so, what is the availability of materials, staff etc. to carry out the work? To the extent there are not, what are the barriers? What would be the generator downtime to retrofit? Would generators be at risk of retirement if retrofitting is not economic and, if so, what are the impacts to reliability?

In addition, consideration needs to be given to the operating and design parameters of generators. For example, in some cases and in certain environments a wind turbine that is optimized to operate at extremely high temperatures, may not be able to also be optimized to operate at extremely low temperatures. In such situations, it makes sense to keep the focus on higher temperatures as the generators provide more reliability value than they might in designing them to respond to infrequent and/or historically low temperatures and icing conditions.

To the extent this recommendation remains in the SAR despite ACP and others recommendation to remove it, ACP requests that exceptions be provided from the requirement to retrofit in situations in which a retrofit:

1. Is not technically feasible, proven and commercially available.
2. Would require operating equipment outside its design parameters, which raises potential conflicts with warranties, safety, and regulatory requirements.

Likes 1

Enel Green Power, 5, Johnson Natalie

Dislikes 0

Response

Jack Cashin - American Public Power Association - 4

Answer

Document Name

Comment

To ensure the efficiencies developed during the Standards Efficiency Review (SER) standard training requirements should be maintained in the Personnel Performance, Training and Qualifications (PER) family of standards. APPA concurs and supports the comments submitted by the Large Public Power Council (LPPC).

Likes 0

Dislikes 0

Response

Jamie Monette - Allete - Minnesota Power, Inc. - 1

Answer

Document Name

Comment

Minnesota Power agrees with MRO's NERC Standards Review Forum (NSRF) comments.

Likes 0

Dislikes 0

Response

Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC

Answer

Document Name

Comment

BPA supports the comments made by the US Bureau of Reclamation.

Likes 0

Dislikes 0

Response

Travis Fisher - Electricity Consumers Resource Council (ELCON) - 7

Answer

Document Name

Comment

Where possible, NERC should take a tiered approach in which reporting requirements and Generator Owner self-assessments are the first step, to be followed by estimates of the cost of any proposed changes, particularly retrofits of existing facilities. Standards should be proposed only after NERC and Generator Owners have a better understanding of the associated costs. NERC should present such cost data to FERC to allow it to assess whether any change in standards is just, reasonable, not unduly discriminatory or preferential, is in the public interest, and satisfies the requirements of Section 215(c) of the Federal Power Act.

Likes 0

Dislikes 0

Response

Natalie Johnson - Enel Green Power - 5

Answer

Document Name

[Enel_2021-07_Cold Weather SAR_Comment_Form_112221 Final.docx](#)

Comment

Enel North America, Inc. also recommends a review of obstacles that may prevent cold weather enhancements such as the tariff structures on intermittent resources. In some regions, tariffs penalize generators for station load or parasitic load. Any cold weather enhancement performed on a site will increase its parasitic load.

Additionally, Enel North America, Inc. recommends language be added to ensure that the importance of safety is addressed throughout the updates and changes for cold weather preparedness. For example, as other requirements include statements such as; *unless compliance cannot be physically implemented or unless such actions would violate safety, equipment, regulatory, or statutory requirements.*

Lastly, Enel North America, Inc. urges NERC to consider factors such as the scope and time of retrofit work, availability of components and workers, impact of coincident outages, etc. as new reliability standards are developed and implemented. Consideration must be given to the potential unintended consequences such as generators choosing to retire rather than retrofit, generators needing to take outages to complete retrofits, unavailability of parts or labor to complete retrofits, lack of commercially available solutions, etc. Given these factors and potential unintended consequences, it may be necessary for a phased-in implementation approach (addressed in the Implementation Plan) to allow GOs with a large number of generation facilities to implement requirements over time while prioritizing the highest impact changes.

Likes 0

Dislikes 0

Response

Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee

Answer

Document Name

Comment

IRC SRC asks that the SDT consider the following comments:

· Additional clarity regarding item 1 (page 3 of the SAR)

IRC SRC is concerned about the use of the term 'protect.' Some of the examples provided in the Joint Inquiry report for cold-weather-critical components (footnote 261) cannot be 'protected' against certain cold weather ambient conditions.

To address this, IRC SRC suggests a language change in the SAR to recognize and allow for this circumstance; i.e. to protect or otherwise provide criteria as to why a cold-weather critical component cannot be protected against certain cold weather ambient conditions.

· Additional clarity surrounding item 4 (pages 3-4 of the SAR)

IRC SRC recommends modifying the recommendation language so that Corrective Action Plans are only developed and implemented when a generating unit experiences an outage, failure to start or derate under the conditions specified with EOP-011-2 Emergency Preparedness and Operations, Requirement R7.3. et al. (or its successors; e.g. if this language is transitioned to an FAC standard) are not met.

· Additional recommendations from the final report that may be included:

(should be included in the current SAR) Recommendation #4: In following EOP-011-2, R7, Generator Owners' plans should specify times for performing inspection and maintenance of freeze protection measures, including at a minimum, the following times: (1) prior to the winter season, (2) during the winter season, and (3) pre-event readiness reviews, to be activated when specific cold weather events are forecast.

(may be considered for a future SDT Project) Recommendation #27: Beyond Recommendation 13 (Generator Owners within ERCOT review potential for units to trip due to low frequency or high rate-of-change of frequency conditions), the team recognized that generating units tripping due to low frequency or high rate-of-change of frequency conditions could occur in the Eastern and Western Interconnections as well. Therefore, the team recommends that FERC, NERC, and the Regional Entities, in cooperation with Generator Owners, study the ERCOT low frequency for protective relay settings associated with generator underfrequency relays, balance of plant relays, and tuning parameters associated with control systems on generating units to trip generating units during low frequency or high rate-of-change of frequency conditions in the other Interconnections, and determine the whether a new Reliability Standard is warranted, or whether other actions can best protect the reliability of the Bulk Electric System.

Also, are there other fuels or infrastructure at jeopardy of curtailment that if cut off can impact electric energy production? Storage? Fuel oil? Coal? If so, the requirement for "critical natural gas infrastructure from manual and automatic load shedding" should be expanded to include any fuel types which rely on electric power for transportation to electric generators. Although natural gas capacity is the focal point of the FERC NERC Joint report, the same principle of not curtailing electric energy to interdependent infrastructure used to supply fuel for electric generation should be applied.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

Exelon concurs with the comments submitted by the EEI for this question.

Likes 0

Dislikes 0

Response

Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6

Answer

Document Name

Comment

None

Likes 0

Dislikes 0

Response

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer

Document Name

Comment

General comments

Question #1 asks which standards should be revised to address the recommendations in the FERC/NERC Joint Inquiry report. Rather than revising existing standards to address all of the recommendations, we believe that a new standard within the Facilities Design, Connections and Maintenance (FAC) standards family would be a better approach to address some of them (suggested title - FAC-0XX-1, Generating Facility Preparedness for Freezing Conditions). Specifically, the GO/GOP recommendations cited in questions 1.a, 1.b, 1.c, 1.d, 1.e and 1.f above could be addressed in this new FAC standard. EOP-011-2 Requirements R7 and R8 could also be pulled into it. This would return EOP-011 to a true "Emergency Operations" standard applicable to the BA, RC, and TOP. The goal of these recommendations, and those previously addressed in Project 2019-06, should be to address the majority of generation issues that can arise during freezing conditions in advance (preventative measures), and to learn from and correct freezing issues that result in unit loss when they occur. Once an emergency operations scenario is entered into as a result of generation loss due to freezing conditions, there may be little the GO/GOP can do in the Real-time Operations time horizon to help preserve/restore the reliability of the bulk electric system. Addressing the GO/GOP recommendations in the EOP-011 standard also casts all cold weather generating issues as being "Emergency" in nature. Emergency operations scenarios should only occur when multiple generating units are impacted. However, each Generator Owner should evaluate all "outages, failures to start, or derates due to freezing" to identify available corrective actions (recommendation cited in 1.d above), even if an isolated event that does not propagate into a system Emergency.

Definition Considerations

Recommendation #2 (1.b) states that "The specified ambient temperature and weather conditions should be based on available extreme temperature and weather data for the generating unit's location, and account for the effects of precipitation and accelerated cooling effect of wind". A definition for "extreme temperature" or "extreme weather" should be considered as an addition to the SAR. The definition should include a frequency of the historical records search, and bound the values with probability...such as: last fifty years of data for the location of the generating unit and within a 98% probability. Without the bounds, some GOs could consider 100 year values, and another 5 year values. The definition of 'extreme' as an adjective is - "existing in a very high degree; going to great or exaggerated lengths; exceeding the ordinary, usual, or expected." (Merriam-Webster). "Extreme", to a

lot of people would not be the upper ends of a ten, twenty, or even a thirty year weather pattern. The SAR should be more specific. It should define extreme frequency (number of years to search for upper and lower conditions).

Recommendation #9 (1.i) states that "In minimizing the overlap of manual and automatic load shed, the load shed procedures of Transmission Operators, Transmission Owners (TOs) and Distribution Providers (DPs) should separate the circuits that will be used for manual load shed from circuits used for underfrequency load shed (UFLS), undervoltage load shed (UVLS) or serving critical load. UFLS/UVLS circuits should only be used for manual load shed as a last resort and for UFLS circuits, should start with the final stage (lowest frequency)." The SAR drafting team should consider whether a definition of "critical load" needs to be added to the SAR, or whether it will be left to the applicable entities judgement.

Likes 0

Dislikes 0

Response