Standard Development Timeline

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

Description of Current Draft

This is the initial draft of the proposed standard for a formal 20-day comment and ballot period.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	July 17, 2024
SAR posted for comment	July 18, 2024 – August 16, 2024

Anticipated Actions	Date
20-day formal comment period with ballot	October 17, 2024 – November 5, 2024
18-day formal or informal comment period with additional ballot	December 3, 2024 – December 20, 2024
15-day formal or informal comment period with additional ballot	January 29, 2025 – February 12, 2025
Board adoption	TBD

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

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

Term(s):

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

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

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

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

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

Previously Approved Terms

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

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

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

regularly maintains the space at a temperature above 32 degrees Fahrenheit (0 degrees Celsius).

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

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

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

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

(3) a Forced Outage.

A. Introduction

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

2. **Number:** EOP-012-32

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

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Generator Owner

   4.1.2. Generator Operator

   4.2. Facilities:

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

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

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

5. **Effective Date:** See Implementation Plan for Project 20241-037 Phase 2.

B. Requirements and Measures

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

1.1. Calculate the Extreme Cold Weather Temperature for each of its applicable unit(s) and identify the calculation date and source of temperature data; and

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

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

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

1.2.1.1. Capability and availability;

1.2.1.2. Fuel supply and inventory concerns;

1.2.1.3. Start-up issues;

1.2.1.4. Fuel switching capabilities; and

1.2.1.5. Environmental constraints.

1.2.2. Generating unit(s) minimum:

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

M1. Each Generator Owner will have evidence documenting its Extreme Cold Weather Temperature calculation and design information, operating data, or engineering analysis that supports its generating unit minimum temperature.

R2. Applicable to generating units ~~with a~~which begin commercial operation[1] ~~date~~ on or after October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit

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

(zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[2] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

2.1 For generating units for which the Generator Owner first contractually committed to design criteria[3] relevant to this Requirement before February 16, 2023[4]:

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

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

2.2 For generating units for which the Generator Owner first contractually committed to design criteria[5] relevant to this Requirement on or after February 16, 2023[6]:

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

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

[3] Such commitments would be demonstrated by signed contractual commitments, emailed correspondence agreeing to thermal design criteria, or other similar documented evidence.

[4] Or the date the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction.

[5] Such commitments would be demonstrated by signed contractual commitments, emailed correspondence agreeing to thermal design criteria, or other similar documented evidence.

[6] Or the date the definition of Extreme Cold Weather Temperature was approved in the relevant jurisdiction.

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

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

R3. Applicable to generating unit(s) in commercial operation prior to October 1, 2027: Each Generator Owner, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1, and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[7] shall: [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning, Operations Planning*]

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

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

R4. Each Generator Owner shall implement and maintain one or more cold weather preparedness plan(s) for its generating units. The cold weather preparedness plan(s)

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

shall include the following, at a minimum: *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. The lowest calculated Extreme Cold Weather Temperature for each unit, as determined in Requirement R1;[8]

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

4.3. Documentation identifying Generator Cold Weather Critical Components;

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

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

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

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

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

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

R6. Each Generator Owner shall, for each generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[9] develop and implement a Corrective Action Plan when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed ~~within 150 days or by July 1, whichever is earlier, and contain at a minimum:~~ before the first day of July, but not more than 150 days after the Generator Cold Weather Reliability Event. The Generator Owner shall: *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

6.1. Ensure the Corrective Action Plan contains at a minimum:

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

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

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

6.1.3. An identification of operating limitations or impacts to the cold weather preparedness plan that would apply until execution of the corrective action(s) identified in the Corrective Action Plan~~.~~;

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

6.1.5. A timetable specifying that implementation of the Corrective Action Plan shall be completed prior to the first day of December following the Generator Cold Weather Reliability Event[10]; and

6.1.6. A review of applicability to similar equipment freeze protection measures at generating units owned by the Generator Owner, with a specified timetable for corrective actions to be completed within 24 calendar months of the Generator Cold Weather Reliability Event;

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

[10] For events that occur early in the season, such as in October or November, the timetable shall specify completion prior to December 1 of the next calendar year.

6.2. Update the Corrective Action Plan action(s) and timetable(s), with justification, and submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA)[11] for approval where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 6.1. The submitted Corrective Action Plan extension request shall include the following;

6.2.1. Circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

6.2.2. Revisions to the selected actions in Part 6.1, if any, including utilization of Operating Procedures, if applicable; and

6.2.3. Updated timetable for implementing the selected actions in Part 6.1.

6.3. Document in a declaration, with justification, any Generator Cold Weather Constraint in accordance with Requirement R8, if applicable, -that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.

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

R7. Each Generator Owner, for each Corrective Action Plan developed pursuant to Requirements R1, R2, or R3~~, or R6,~~ shall, as applicable: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

7.1. Include a timetable for implementing the selected corrective action(s) that shall:

7.1.1. List the action(s) which remedy~~address~~(ies) issues with existing ~~equipment or~~ freeze- protection measures, if any, to be completed within 24 calendar months of completing development of the Corrective Action Plan, regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures;

[11] Extension requests will be received and evaluated in accordance with the NERC process. The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.

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

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

7.2. ~~Implement~~ Complete all actions described in the Corrective Action Plan in accordance with the specified timetables in ~~Requirement R7~~ Part 7.1;

7.3. ~~Update the Corrective Action Plan action(s) and timetable(s),~~ Submit a Corrective Action Plan extension request, for the approval of the CEA[12], where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 7.1. The submitted request shall:~~with justification, if corrective action(s) change or timetable(s) exceed the timelines in Requirement R7 Part 7.1; and~~

~~7.~~3.1 Explain the ~~C~~circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

~~7.~~3.2 Include, as applicable, revisions to the selected actions in Part 7.1, including utilization of Operating Procedures; and

~~7.~~3.3 Include an updated timetable for implementing the selected actions in Part 7.1.

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

M7. Each Generator Owner shall have dated evidence that demonstrates it implemented each Corrective Action Plan, including updating actions or timetables, or has explained in a declaration why corrective actions are not being implemented in accordance with Requirement ~~R8~~R7. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the implementation of each Corrective Action Plan and the completion of actions for each Corrective Action Plan including revision history of each Corrective Action Plan, documentation from the Compliance Enforcement Authority indicating that a Corrective Action Plan extension request was granted and, if applicable, justification to support any changes to corrective action(s) identified in the Corrective Action Plan or any Corrective Action Plan extension requests when timetables exceeding the timelines in Requirement R7 Part 7.1. For each Corrective Action Plan

[12] Extension requests will be received and evaluated in accordance with the NERC process. The extension requests for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction.

applying to multiple generating units, the timetable shall reflect implementation at each unit addressed in the Corrective Action Plan. Evidence may also include work management program records, work orders, and maintenance records. Any declaration shall contain dated documentation to support constraints identified by the Generator Owner.

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

8.1. Submit its Generator Cold Weather Constraint declaration(s) to the CEA within 45 days of determining that the Generator Cold Weather Constraint is applicable. For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit the Generator Cold Weather Constraint declaration(s) no later than 15 days after commercial operation;

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

8.2. Review any Generator Cold Weather Constraint declaration validated by the CEA every 24 calendar months to determine if it remains valid under Attachment 1;

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

8.4 If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with the timetables in Requirement R6 Part 6.1 or Requirement R7 Part 7.1, to begin from the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid.

M8. Each Generator Owner shall have dated evidence that demonstrates it performed the actions in accordance with Requirement R8~~the review and updated operating limitations as needed~~. Acceptable evidence may include, but is not limited to the following dated documentation (electronic or hardcopy format): records that document the performance of the review and update to the operating limitations, as needed.

C. Compliance

1. Compliance Monitoring Process

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

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

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

- The Generator Owner shall retain data or evidence to support its current Extreme Cold Weather Temperature calculation and generating unit cold weather data, plus each calculation or revision since the last audit, for Requirement R1 and Measure M1.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R2 or R3 is complete, whichever timeframe is greater, for Requirements R2 and R3 and Measures M2 and M3. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.
- The Generator Owner shall retain the current cold weather preparedness plan(s), as evidence of review or revision history, plus each version issued since the last audit and evidence of compliance since the last audit for Requirement R4 and Measure M4.
- The Generator Owner or Generator Operator shall keep data or evidence to show compliance for three years for Requirement R5 and Measure M5.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan under Requirement R6 is complete, whichever timeframe is greater, for Requirement R6 and Measure M6.
- The Generator Owner shall keep data or evidence to show compliance for three years, or until any Corrective Action Plan is complete, whichever time frame is greater, for Requirement R7 and Measure M7. Generator Cold Weather Constraint data or evidence shall be retained until no longer valid.

- The Generator Owner shall maintain data or evidence to support its current Generator Cold Weather Constraint declaration, plus each revision since the last audit, for Requirement R8 and Measure M8.

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

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

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

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	described in Requirement R5 to the greater of: • one applicable personnel at a single generating unit; or • 5% or less of its total applicable personnel.	described in Requirement R5 to the greater of: • two applicable personnel at a single generating unit; or • more than 5%, but less than or equal to 10% of its total applicable personnel.	described in Requirement R5 to the greater of: • three applicable personnel at a single generating unit; or • more than 10%, but less than or equal to 15% of its total applicable personnel.	described in Requirement R5 to the greater of: • four or more applicable personnel at a single generating unit; or • more than 15% of its total applicable personnel.
R6.	The Generator Owner developed and implemented a Corrective Action Plan for a Generator Cold Weather Reliability Event, but it was not developed in accordance with the timeline not within 150 days or by July 1 as required specified in Requirement R6.	The Generator Owner developed and implemented a 's Corrective Action Plan for a Generator Cold Weather Reliability Event, but it failed to comply withcontain one of the elements in Requirement R6, Parts 6.1 through 6.3.	The Generator Owner developed and implemented a 's Corrective Action Plan for a Generator Cold Weather Reliability Event, but it failed to comply withcontain two of the elements in Requirement R6, Parts 6.1 through 6.3. OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R6, Part 6.2 (if applicable), but it did not include one of the elements in Requirement R6, Part 6.2.	The Generator Owner developed a Corrective Action Plan for a Generator Cold Weather Reliability Event, but failed to implement it. OR The Generator Owner developed and implemented a's Corrective Action Plan, but failed to comply withcontain three or more of the elements in Requirement R6, Parts 6.1 through 6.3. OR The Generator Owner did not submit a Corrective Action Plan extension request in

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				accordance with Requirement R6, Part 6.2 (if applicable). OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Part 6.2 (if applicable), but it did not include two or more of the elements in Requirement R6, Part 6.2. OR The Generator Owner did not document in a declaration any Generator Cold Weather Constraint(s), ~~develop a Corrective Action Plan,~~ as required by Requirement R6, Part 6.3.
R7.	~~The Generator Owner implemented a Corrective Action Plan, but failed to update the Corrective Action Plan when corrective action(s) changed in accordance with Requirement R7.~~The	~~The Generator Owner implemented a Corrective Action Plan, but failed to include a timetable for implementing the selected corrective actions meeting the criteria of Requirement R7~~	The Generator Owner included in its~~implemented a~~ Corrective Action Plan a timetable for implementing the selected corrective actions, completed actions in accordance with that timetable (Part 7.2), and	The Generator Owner included in its~~failed to implement a~~ Corrective Action Plan a timetable for implementing the selected corrective actions, completed actions in accordance with that

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	Generator Owner completed selected corrective action(s) in accordance with the 24 and 48 calendar month timelines provided in Requirement R7, Part 7.1 (Part 7.2), but failed to include in its Corrective Action Plan a timetable listing such action(s) in accordance with Requirement R7, Parts 7.1.1-7.1.2.	~~Part 7.1.~~The Generator Owner included a timetable for implementing the selected corrective action(s) in its Corrective Action Plan in accordance with Requirement R7, Part 7.1 and completed actions in accordance with that timetable (Part 7.2), but it failed to list the updates to the cold weather preparedness plan as required in Requirement R7, Part 7.1.3.	submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.3 when the timetables for completion were projected to exceed the timelines in Part 7.1, but its request did not include one of the elements in Requirement R7, Part 7.3.~~, but failed to implement the Corrective Action Plan within the specified timetable or failed to update the Corrective Action Plan, with justification, when timetable(s) exceeded the timelines in Requirement R7 Part 7.1.~~	timetable (Part 7.2), and submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part 7.3 when the timetables for completion were projected to exceed the timelines in Part 7.1, but its request did not include two or more of the elements in Requirement R7, Part 7.3.~~or failed to document in a declaration why corrective actions are not being implemented in accordance with Requirement R7.~~ OR The Generator Owner included in its Corrective Action Plan a timetable for implementing the selected corrective actions, and completed actions in accordance with that timetable (Part 7.2), but failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				timelines in Part 7.1 (if applicable). OR The Generator Owner failed to complete corrective action(s) described in the Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) that preclude the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan.
R8.	~~N/A~~ The Generator Owner submitted a Generator Cold Weather Constraint in accordance with Requirement R8, Part 8.1, but did not do so within the specified timeframe.	~~N/A~~ The Generator Owner failed to comply with one of the elements in Requirement R8, Parts 8.2 through 8.4.	The Generator Owner failed to comply with ~~one~~ two of the elements in Requirement R8, Parts ~~8.1~~8.2 through ~~8.2~~8.4.	The Generator Owner failed to comply with three ~~all~~ of the elements in Requirement R8, Parts 8.2 through 8.4~~8.1 through 8.2~~. OR The Generator Owner declared but failed to submit a Generator Cold Weather Constraint in accordance with Requirement R8, Part 8.1.

D. Regional Variances

None.

E. Associated Documents

Implementation Plan

Attachment 1

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

A Generator Cold Weather Constraint is any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components using the following criteria:

Pre-Approved Generator Cold Weather Constraints

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

- Wind turbine towers that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1.
- Heat tracing or other de-icing technologies for wind turbine blades that are not available in the Generator Owner's location.
- Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities.
- Applying heat to remove accumulated frozen precipitation on solar panels.
- Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters.

Case-by-case Determinations of Generator Cold Weather Constraints

The following ~~s~~situations may constitute a Generator Cold Weather Constraint, depending on the facts and circumstances. Only upon approval by the Compliance Enforcement Authority will these circumstances comprise a valid Generator Cold Weather Constraint:

1. The application of a specific freeze protection measure will void an equipment warranty.
2. The application of a specific freeze protection measure is precluded by technical or physical limitations. For example:
    a. Installing wind breaks around a cooling tower or air-cooled heat exchanger which requires free airflow for its functionality;
    b. Applying freeze control measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system.
    c. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.

3. The application of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:
    a. The application of freeze protection measures would result in the premature retirement of an existing dispatchable generating unit with no acceptable replacement currently available;
    b. The freeze protection measures would be applied to a generating unit that has a previously published retirement date within three years of the Generator Cold Weather Cconstraint declaration;
    c. The application of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit(s);
    d. The application of freeze protection measures would reduce the generating unit's ability to provide Real Power or Reactive Power by more than three percent; or
    e. The application of freeze protection measures would reduce the summer net dependable capacity[1] of the generating unit by more than three percent.
    f. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.

4. The application of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.

5. Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Generator Cold Weather Critical Components.

When submitting a Generator Cold Weather Constraint declaration to the CEA per Requirement R8, the Generator Owner must include documentation that defends and supports the declared constraint and also describes other compensating or mitigating freeze protection measures, if applicable, that the Generator Owner will apply. An approved Generator Cold Weather Constraint declaration for any specific Generator Cold Weather Critical Component does not relieve the Generator Owner of its obligation to otherwise prepare its applicable generating unit(s) to meet the requirements of EOP-012-3.

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

Version History

Version	Date	Action	Change Tracking
1	October 1, 2024	Drafted by Project 2021-07	New
2	February 16, 2023	Revisions drafted by Project 2021-07 due to FERC Order and inquiry Recommendations.	Revisions
2	February 15,2024	Board Adopted	
2	June 27, 2024	FERC Approved	
3	October 17, 2024	Drafted by Project 2024-03	As directed by the June 2024 FERC Order