Standard Development Timeline

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

Description of Current Draft

This is the second draft of the proposed standard for a formal 18-day comment and ballot period.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	July 17, 2024
SAR posted for comment	July 18, 2024 – August 16, 2024
20-day formal comment period with initial ballot	October 17, 2024 – November 5, 2024

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

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

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

Term(s):

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

Previously Approved Terms

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

Extreme Cold Weather Temperature – The temperature equal to the lowest 0.2 percentile of the hourly temperatures measured in December, January, and February from ~~1/1/2000~~01/01/2000 through the date the temperature is calculated.

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

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

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

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

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

(3) a Forced Outage.

A. Introduction

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

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

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

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Generator Owner

   4.1.2. Generator Operator

   4.2. Facilities:

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

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

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

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

B. Requirements and Measures

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

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

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

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

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

1.2.1.1. Capability and availability;

1.2.1.2. Fuel supply and inventory concerns;

1.2.1.3. Start-up issues;

1.2.1.4. Fuel switching capabilities; and

1.2.1.5. Environmental constraints.

1.2.2. Generating unit(s) minimum:

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

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

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

2.1 For generating units for which the Generator Owner first contractually committed to design criteria[3] relevant to this Requirement before ~~February 16~~June 29, 2023[4]:

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

- ~~Have~~Develop, implement, and complete by April 1, 2028, a Corrective Action Plan~~(s) in place (to include any applicable Generator Cold Weather Constraint(s) upon beginning commercial operation,~~ to add new or modify existing or previously planned freeze protection measures to provide the capability to operate at the generating unit(s)' Extreme Cold Weather Temperature with a sustained concurrent twenty (20) mph (32 km/h) wind speed for (i) a period of not less than twelve (12) continuous hours, or (ii) the maximum operational duration for intermittent energy resources if less than twelve (12) continuous hours~~.~~; or

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

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

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

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

[4] ~~Or~~In non-U.S. jurisdictions, use the date ~~the definition of Extreme Cold Weather Temperature was~~ approved by the applicable government authority in the relevant jurisdiction.

2.2 For generating units for which the Generator Owner first contractually committed to design criteria[5] relevant to this Requirement on or after ~~February 16~~June 29, 2023[6]:

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

M2. Each Generator Owner will have dated evidence that demonstrates it has freeze protection measures for its generating unit(s) in accordance with R2, or it has developed, implemented, and completed by April 1, 2028, a Corrective Action Plan, or it has declared a Generator Cold Weather Constraint for the identified issues. Acceptable evidence may include the following (electronic or hardcopy format): Identification of generating unit(s) minimum temperature under Requirement R1 Part 1.2.2 which is equal to or less than the generating unit's Extreme Cold Weather Temperature, documentation of freeze protection measures, Corrective Action Plan(s) (if applicable), and Generator Cold Weather Constraints (if applicable).

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

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

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

[6] ~~Or~~In non-U.S. jurisdictions, use the date ~~the definition of Extreme Cold Weather Temperature was~~ approved by the applicable government authority in the relevant jurisdiction.

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

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

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

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

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

4.3. Documentation identifying Generator Cold Weather Critical Components;

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

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

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

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

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

preparedness plan(s) developed pursuant to Requirement R4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*

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

R6. Each Generator Owner shall, ~~for each~~when experiencing a Generator Cold Weather Reliability Event at a generating unit that has a calculated Extreme Cold Weather Temperature at or below 32 degrees Fahrenheit (zero degrees Celsius) as determined in Requirement R1 and that self-commits or is required to operate at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius),[9] develop and implement[10] a Corrective Action Plan ~~when the generating unit experiences a Generator Cold Weather Reliability Event. The Corrective Action Plan shall be developed before the first day of July, but not more than 150 days after the Generator Cold Weather Reliability Event. The Generator Owner shall~~(s) to address identified issues as follows: *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

6.1. The Generator Owner shall develop a Corrective Action Plan for the generating unit experiencing a Generator Cold Weather Reliability Event.

6.2. The Generator Owner shall conduct a review of the applicability of the corrective actions from the Corrective Action Plan developed under Part 6.1 to freeze protection measures on similar equipment at other generating unit(s) owned by the Generator Owner and, if corrective actions are applicable, develop or update a Corrective Action Plan no later than 12 calendar months following the Generator Cold Weather Reliability Event to address the other unit(s).

~~**6.1.** Ensure the~~**6.3.** For each Corrective Action Plan ~~contains~~, the Generator Owner shall include at a minimum:

~~**6.1.1**~~**6.3.1.** A summary of the identified cause(s) ~~for~~of the Generator Cold Weather Reliability Event, where applicable, and any relevant associated data;

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

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

~~**6.1.2**~~**6.3.2.** A list of actions to add new freeze protection measures or remedy issues with existing freeze protection measures;

~~**6.1.3**~~**6.3.3.** An identification of operating limitations on the generating unit(s), or impacts to the cold weather preparedness plan, if any, that would apply until ~~execution~~implementation of the corrective action(s) identified in the Corrective Action Plan is completed;

~~**6.1.4**~~**6.3.4.** A description of the updates to the cold weather preparedness plan required under Requirement R4 to identify updates or additions to the Generator Cold Weather Critical Components and their freeze protection measures, if required; and

~~**6.1.5**~~**6.3.5.** A timetable specifying that implementation of the Corrective Action Plan(s) shall be completed as follows:

6.3.5.1. For the generating unit experiencing the Generator Cold Weather Reliability Event, prior to the first day of the first December following the Generator Cold Weather Reliability Event[10]~~; and~~.[11]

~~**6.1.6.** A review of applicability to similar equipment freeze protection measures at~~**6.3.5.2.** For other generating ~~units~~unit(s) owned by the Generator Owner, ~~with a specified timetable for corrective actions to be completed~~ within 24 calendar months of the Generator Cold Weather Reliability Event~~;~~.

~~**6.2.** Update the~~**6.4** If a Generator Owner determines it will be unable to complete one or more of the actions in a Corrective Action Plan ~~action(s) and timetable(s), with justification, and~~in accordance with the timetables specified in Requirement R6 Part 6.3.5 due to circumstances beyond its control, the Generator Owner shall submit a Corrective Action Plan extension request to the Compliance Enforcement Authority (CEA)[11] for approval ~~where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 6.1~~. The submitted Corrective Action Plan extension request shall include the following~~;~~ :

~~**6.2.1.** Circumstances~~**6.4.1.** An explanation of the circumstances causing the delay and ~~how~~why those circumstances are beyond the control of the Generator Owner;

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

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

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

~~6.2.2~~6.4.2. Revisions to the selected actions in Part ~~6.1~~6.3.2, if any, including utilization of ~~Operating Procedures~~operating procedures, if applicable; and

~~6.2.3~~6.4.3. Updated timetable for implementing the selected actions in Part ~~6.1~~6.3.2.

~~6.3. Document~~6.5 The Generator Owner shall document in a declaration, with justification, if applicable, any Generator Cold Weather Constraint in accordance with Requirement R8, ~~if~~as applicable~~, that precludes the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan~~.

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

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

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

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

~~7.1.1. List the action(s) which~~**7.1.2.** A list of any actions that remedy~~(ies)~~ issues with existing freeze protection measures~~, if any, to be completed~~ with a timetable specifying completion of such measures within 24 calendar months of completing development of the Corrective Action Plan~~,~~ (regardless of any longer timelines in the Corrective Action Plan associated with new freeze protection measures);

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

7.1.3. ~~Describe the~~A description of updates to the cold weather preparedness plan required under Requirement R4 to identify the updates or additions

to the Generator Cold Weather Critical Components and their freeze protection measures~~.~~; and

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

7.2. ~~Complete all~~If a Generator Owner determines it will be unable to complete one or more of the actions ~~described in the~~in a Corrective Action Plan in accordance with the ~~specified~~ timetables ~~in~~specified in Requirement R7 Part 7.1~~;~~

due to circumstances beyond its control, the Generator Owner shall submit ~~**7.3.** Submit~~ a Corrective Action Plan extension request~~, for the approval of the CEA[12], where the timetable(s) for completing selected actions are projected to exceed the timelines in Part 7.1~~ to the CEA for approval. The submitted Corrective Action Plan extension request shall include the following:

~~**7.**3.1 Explain the~~**7.2.1.** An explanation of the circumstances causing the delay and how those circumstances are beyond the control of the Generator Owner;

~~**7.**3.2 Include, as applicable, revisions~~**7.2.2.** Revisions to the selected actions in ~~Part~~Parts 7.1, if any, including utilization of ~~Operating Procedures~~operating procedures, if applicable; and

~~**7.**3.3 Include an updated~~**7.2.3.** Updated timetable for implementing the selected actions in Part 7.1.

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

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

M7. Each Generator Owner shall have dated evidence that ~~demonstrates it~~it developed and implemented ~~each~~a Corrective Action Plan~~, including updating actions or timetables, or has explained in a declaration why corrective actions are not being implemented~~ for applicable unit(s) in accordance with Requirement R7. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): ~~records that document the implementation of each~~ Corrective Action Plan~~ and the completion of actions for each Corrective Action Plan~~

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

~~including revision history of each Corrective Action Plan, documentation from the Compliance Enforcement Authority indicating that a Corrective Action Plan extension request was granted and, if applicable, justification to support any changes to corrective action(s) identified in the Corrective Action Plan or~~(s), completed work orders, copies of any Corrective Action Plan extension requests ~~when timetables exceeding the timelines in Requirement R7 Part 7.1. For each Corrective Action Plan applying to multiple generating units, the timetable shall reflect implementation at each unit addressed in~~and supporting documentation, updated cold weather preparedness plan(s) where indicated as needed by the Corrective Action Plan~~. Evidence may also include work management program records, work orders, and maintenance records. Any declaration shall contain dated documentation to support constraints identified by the Generator Owner.~~, and, where applicable, declared Generator Cold Weather Constraints.

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

8.1. Submit its Generator Cold Weather Constraint declaration(s) to the CEA ~~within 45 days of determining that the Generator Cold Weather Constraint is applicable.~~ as follows:

- For Generator Cold Weather Constraints determined in accordance with Requirement R2 for generating unit(s) upon beginning commercial operation, submit ~~the Generator Cold Weather Constraint declaration(s) no later than~~within 15 calendar days after commercial operation; or
- ~~**8.2.** Review any~~For all other Generator Cold Weather Constraints, submit within 45 calendar days of determining that the Generator Cold Weather Constraint ~~declaration validated by the CEA every 24 calendar months to determine if it remains valid under Attachment 1;~~is applicable.

~~**8.3**~~**8.2.** Update the operating limitations ~~associated with capability and availability~~ under Requirement R1 Part R1.2 if applicable; and

~~**8.4**~~**8.3.** If the CEA determines the declared Generator Cold Weather Constraint is invalid, update its Corrective Action Plan(s) to require corrective actions be completed in accordance with ~~the timetables in~~ Requirement R6 ~~Part 6.1~~ or Requirement R7~~ Part 7.1, to begin from the date the Generator Owner is notified that the Generator Cold Weather Constraint is invalid.~~, as applicable, subject to any extensions approved by the CEA or implement freeze protection measures to provide the necessary capability in accordance with Requirement R2.

M8. Each Generator Owner shall have dated evidence that demonstrates it performed the actions in accordance with Requirement R8. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): a copy of the Generator Cold Weather Constraint declaration, evidence the declaration was provided to the Compliance Enforcement Authority in accordance with the

specified timeframe, records that document update(s) to the operating limitations, as needed, and updated Corrective Action Plan(s), if applicable.

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

~~M8~~M9. Each Generator Owner shall have dated evidence that demonstrates it ~~performed the actions~~reviewed Generator Cold Weather Constraints in accordance with Requirement ~~R8~~R9. Acceptable evidence may include, but is not limited to, the following dated documentation (electronic or hardcopy format): records that document the performance of the review ~~and update to the operating limitations, as needed~~within the required timeframe.

C. Compliance

1. Compliance Monitoring Process

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

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

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

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

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

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

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

- The Generator Owner shall maintain data or evidence to support that it reviewed each Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority at least once every 36 calendar months since the last audit, for Requirement R9 and Measure M9.

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

Violation Severity Levels

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

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

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

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

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				include two or more of the elements in Requirement R6, Part ~~6.2~~6.4. OR The Generator Owner failed to implement corrective action(s) identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s), ~~as required by~~in accordance with Requirement R6, Part ~~6.3~~6.5.
R7.	~~The Generator Owner completed selected corrective action(s) in accordance with the 24 and 48 calendar month timelines provided in Requirement R7, Part 7.1 (Part 7.2), but failed to include in its Corrective Action Plan a timetable listing such action(s) in accordance with Requirement R7, Parts 7.1.1-7.1.2.~~N/A	The Generator Owner ~~included a timetable for implementing the selected corrective action(s) in its~~developed and implemented a Corrective Action Plan in accordance with Requirement R7, ~~Part 7.1 and completed actions in accordance with that timetable (Part 7.2),~~ but it failed to ~~list the~~include a description of updates to the cold weather preparedness plan and identification of	The Generator Owner ~~included in its~~developed and implemented a Corrective Action Plan ~~a timetable for implementing the selected corrective actions, completed actions~~ in accordance with ~~that timetable (Part 7.2),~~Requirement R7, but it failed to include one of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2.	The Generator Owner developed and implemented a Corrective Action Plan in accordance with Requirement R7, but it failed to include two or more of the required elements under Requirement R7 Parts 7.1.1 and 7.1.2. OR The Generator Owner ~~included in its Corrective Action Plan a timetable for implementing the selected corrective~~

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
		operating limits as required in Requirement R7, ~~Part~~Parts 7.1.3 and 7.1.4.	OR The Generator Owner submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part ~~7.3 when the timetables for completion were projected to exceed the timelines in Part 7.1~~7.2 (if applicable), but ~~its request~~it did not include one of the required elements ~~in Requirement R7, Part 7.3.~~.	~~actions, completed actions in accordance with that timetable (Part 7.2), and~~ submitted a Corrective Action Plan extension request in accordance with Requirement R7, Part ~~7.3 when the timetables for completion were projected to exceed the timelines in Part 7.1~~7.2 (if applicable), but ~~its request~~it did not include two or more of the required elements ~~in Requirement R7, Part 7.3~~. OR The Generator Owner ~~included in its Corrective Action Plan a timetable for implementing the selected corrective actions, and completed actions in accordance with that timetable (Part 7.2), but~~ failed to submit a Corrective Action Plan extension request where the timetables for completing selected actions were projected to exceed the timelines in Part 7.1 (if applicable).

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				OR The Generator Owner failed to ~~complete~~implement corrective action(s) ~~described in the~~identified in a Corrective Action Plan, and did not document in a declaration any Generator Cold Weather Constraint(s) ~~that preclude the Generator Owner from implementing selected action(s) contained within the Corrective Action Plan~~in accordance with Requirement R7 Part 7.3.
R8.	The Generator Owner ~~submitted~~declared a Generator Cold Weather Constraint ~~in accordance with Requirement R8, Part 8.1,~~and submitted it to the Compliance Enforcement Authority but it did not do so within the ~~specified~~ timeframe provided in Requirement R8 Part 8.1.	The Generator Owner declared a Generator Cold Weather Constraint, but failed to ~~comply with one of the elements in~~update its operating limitations as required under Requirement R8, ~~Parts~~Part 8.2 ~~through 8.4~~(if applicable).	The Generator Owner ~~failed to comply with two of the elements in~~declared a Cold Weather Constraint, but failed to update its Corrective Action Plan following a determination by the Compliance Enforcement Authority that the constraint is invalid in accordance with Requirement R8~~, Parts 8.2 through 8.4~~ Part 8.3 (as applicable).	The Generator Owner ~~failed to comply with three of the elements in Requirement R8, Parts 8.2 through 8.4~~declared a Generator Cold Weather Constraint but failed to submit it to the Compliance Enforcement Authority. OR The Generator Owner ~~declared but failed to submit a Generator Cold Weather Constraint~~failed to implement

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				freeze protection measures to provide the necessary capability in accordance with Requirement R8~~,~~ Part ~~8.1~~8.3.
R9.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 36 but fewer than 38 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 38 but fewer than 40 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was conducted more than 40 but fewer than 42 calendar months after CEA validation or after the previous Generator Owner review.	The Generator Owner reviewed a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9, but this review was performed more than 42 calendar months after CEA validation or after the previous Generator Owner review. OR The Generator Owner failed to review a Generator Cold Weather Constraint declaration validated by the Compliance Enforcement Authority to determine if it remains valid in accordance with Requirement R9.

D. Regional Variances

None.

E. Associated Documents

Implementation Plan

Calculating Extreme Cold Weather Temperature

EOP-012-3 Technical Rationale

Generator Cold Weather CAP Extension and Constraint Process

Attachment 1

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

~~A~~The definition of a Generator Cold Weather Constraint is ~~any~~: "Any condition that would preclude a Generator Owner from implementing freeze protection measures on one or more Generator Cold Weather Critical Components ~~using the following criteria:~~. Freeze protection measures include practices, methods, or technologies implemented by the electric industry in areas that experience similar winter climate conditions and are not intended to be limited to optimum practices, methods, or technologies".

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

~~Pre-Approved~~Known Generator Cold Weather Constraints

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

- ~~Wind~~Individual wind turbine towers manufactured~~-~~ prior to October 1, 2027 that have structural limitations established by Original Equipment Manufacturers (OEMs) based on a minimum temperature that is higher than the Extreme Cold Weather Temperature calculated per Requirement R1 for generating units that began commercial operation prior to October 1, 2027.
- ~~Heat~~Implementation of heat tracing or other ~~de-icing~~de-icing technologies for wind turbine blades, that ~~are not~~, through analysis, have been shown to not be effective or not made available ~~in~~by the ~~Generator Owner's location~~OEM for generating units of a comparable types in regions that experience similar winter climate conditions.
- Replacing existing wind turbine blades with new blades solely for the purpose of adding de-icing or ice-minimizing capabilities.
- ~~Applying heat to remove~~Removal of accumulated frozen precipitation on solar panels.
- Applying heat upstream of inlet air filters to prevent the buildup of frozen precipitation on combustion turbine inlet air filters.

Case-by-case Determinations of Generator Cold Weather Constraints

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

1. The ~~application~~implementation of a specific freeze protection measure will void an equipment warranty.
2. The implementation of a specific freeze protection measure applied to address conditions beyond the manufacturer's design limitations.

~~2.~~3. The ~~application~~implementation of a specific freeze protection measure is precluded by technical or physical limitations. For example:

a. Installing wind breaks around a cooling tower or air-cooled heat exchanger ~~which~~that requires free airflow for its functionality;

b. ~~Applying~~Implementing freeze ~~control~~protection measures with size or weight that would require the structural re-design and re-construction of the protected equipment or its support system~~.~~;

c. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.

~~3.~~4. A determination, through an analysis, that the freeze protection measure has been shown to be ineffective or that there is no record that such a measure has been effectively utilized on generating unit(s) of comparable types in regions that experience similar winter climate conditions.

~~4.~~5. ~~The application~~A determination, through an analysis, that the implementation of a specific freeze protection measure or measures would adversely affect the reliability of the Bulk Power System to an extent that outweighs the reliability benefit of applying the freeze protection measure(s). For example:

a. The ~~application~~implementation of freeze protection measures, while feasible, would result in the accelerated premature retirement of an existing ~~dispatchable~~ generating unit with no acceptable replacement ~~currently~~ available within the accelerated timeframe;

~~The freeze protection measures would be applied to a generating unit that has a previously published retirement date within three years of the Generator Cold Weather Constraint declaration;~~

b. The ~~application~~implementation of freeze protection measures would cause the Generator Owner to cancel plans to finish the development of a new generating unit~~(s)~~;

c. The ~~application~~implementation of freeze protection measures would reduce the generating unit's ability to provide Real Power or Reactive Power by more than three percent, or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.), when freeze protection measures are not in use; or

d. The ~~application~~implementation of freeze protection measures would reduce the summer net dependable capacity[12], or net dependable capacity at Peak Demand, of the generating unit by more than three percent~~.~~ or another value supported by the appropriate functional entity (e.g., TP, RC, BA, etc.);

e. Other similar circumstances as determined through operating experience or engineering analysis and supported with justification.

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

~~5.~~6. The implementation of new freeze protection measures to an existing generating unit that has previously communicated a retirement date to the appropriate functional entity (e.g., Transmission Planner (TP), Reliability Coordinator (RC), Balancing Authority (BA), etc.) that falls within three calendar years of the Generator Cold Weather Constraint declaration;

~~6.~~7. The ~~application~~implementation of a specific freeze protection measure would introduce the risk of noncompliance with other statutory, regulatory, or health and safety requirements or standards for which relief via waiver, exemption or other means of excused noncompliance is not available during extreme cold weather.

~~7.~~8. A determination through an analysis that the freeze protection measure is not available on the commercial market for generating units of comparable types in regions that experience similar winter climate conditions.

9. Implementation of freeze protection measures would not increase reliability of a generating unit due to technical or physical constraints on fuel supply which are not due to Fixed Fuel Supply Components, and which are outside the Generator Owner's control.

~~8.~~10. Other situations identified by the Generator Owner that may, based on the specific circumstances beyond the Generator Owner's control, limit its ability to apply freeze protection measures to Generator Cold Weather Critical Components.

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

Version History

Version	Date	Action	Change Tracking
1	October 1, 2022	Drafted by Project 2021-07	New
2	February 16, 2023	Revisions drafted by Project 2021-07 due to FERC Order and inquiry Recommendations.	Revisions
2	February 15,2024	Board Adopted	
2	June 27, 2024	FERC Approved	
3	October 17, 2024	Drafted by Project 2024-03	As directed by the June 2024 FERC Order