

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**North American Electric  
Reliability Corporation**

)  
)

**Docket No. RD23-1-000**

**COMMENTS OF THE ISO/RTO COUNCIL**

Pursuant to the Secretary’s November 2 and 29, 2022 notices in this proceeding,<sup>1</sup> the ISO/RTO Council (“IRC”)<sup>2</sup> hereby submits these comments regarding the October 28, 2022 Petition of the North American Electric Reliability Corporation (“NERC”) for approval of proposed Reliability Standards EOP-011-3 and EOP-012-1.<sup>3</sup>

**I. COMMENTS**

The IRC appreciates the work of NERC staff and the Standard Drafting Team in developing proposed Reliability Standards EOP-011-3 and EOP-012-1. The IRC recognizes that the proposal represents an improvement to the status quo concerning winter preparedness requirements, and recognizes the need for Commission action at this time. While the IRC is

---

<sup>1</sup> *N. Am. Elec. Reliability Corp.*, Notice of the Secretary, Docket No. RD23-1-000, at 4 (Nov. 2, 2022) (establishing a comment date of December 1, 2022); *see also N. Am. Elec. Reliability Corp.*, Notice Granting Extension of Time, Docket No. RD23-1-000 (Nov. 29, 2022) (“Upon consideration, notice is hereby given that the comment period is extended seven days to and including December 8, 2022.”).

<sup>2</sup> The IRC comprises the following independent system operators (“ISOs”) and regional transmission organization (“RTOs”): Alberta Electric System Operator (“AESO”); California Independent System Operator (“CAISO”); Electric Reliability Council of Texas, Inc. (“ERCOT”); the Independent Electricity System Operator of Ontario, Inc. (“IESO”); ISO New England Inc. (“ISO-NE”); Midcontinent Independent System Operator, Inc. (“MISO”); New York Independent System Operator, Inc. (“NYISO”); PJM Interconnection, L.L.C. (“PJM”); and Southwest Power Pool, Inc. (“SPP”). AESO and IESO are not subject to the Commission’s jurisdiction, but join in this filing. ERCOT joins this filing but wishes to note that generators operating in the ERCOT region are now subject to weatherization standards adopted by the Public Utility Commission of Texas (“PUCT”) (*See* 16 Tex. Admin. Code § 25.55). ERCOT will ultimately defer to the judgment of the PUCT and the Texas Legislature as to the appropriate weatherization standard in the ERCOT region.

<sup>3</sup> *N. Am. Elec. Reliability Corp.*, Petition of the North American Electric Reliability Corporation, Docket No. RD23-1-000 (Oct. 28, 2022) (hereafter, the “NERC Petition”).

supportive of EOP-011-3, as proposed in the NERC Petition, the IRC has significant concerns regarding EOP-012-1 (the generator winterization standard).

Accordingly, the IRC respectfully requests that the Commission find that the issues raised by the IRC in these comments have merit and warrant amendments to EOP-012-1 to address the specific concerns detailed herein. To this end, the IRC requests that the Commission issue an order:

- (i) approving EOP-011-3 and EOP-012-1 as drafted;
- (ii) simultaneously invoking the Commission’s authority under Federal Power Act (“FPA”) section 215(d)(5)<sup>4</sup> to direct NERC to revise EOP-012-1 to address the important considerations described herein; and
- (iii) directing NERC to submit a revised version of EOP-012-1 to the Commission by no later than November 2023.<sup>5</sup>

The IRC members, through the IRC Standards Review Committee, went on record at each opportunity in the NERC stakeholder process to raise important concerns with EOP-012-1 as drafted, and proposed solutions that would address its weaknesses. In the IRC’s view, those proposed solutions that were not adopted go to the heart of ensuring that the standard is effective in meeting the stated reliability goal.

---

<sup>4</sup> 16 U.S.C. 824o(d)(5) (“The Commission, upon its own motion or upon complaint, may order the Electric Reliability Organization to submit to the Commission a proposed reliability standard or a modification to a reliability standard that addresses a specific matter if the Commission considers such a new or modified reliability standard appropriate to carry out this section.”).

<sup>5</sup> In Section I.F. of these Comments, the IRC notes its concern with the elongated compliance schedule that NERC has proposed. The November 2023 deadline referenced above aligns with the current proposed compliance schedule. However, in the event that the Commission tightens the compliance deadline (with the potential for unit-specific exceptions), as IRC recommends, then this deadline should be moved up accordingly.

As a result, in balancing the recognition that the standard is an improvement over the status quo but, on the other hand, may not be fully effective in meeting the reliability goal given the various exceptions and limitations embodied in the draft, the IRC proposes the procedural approach outlined herein, which the Commission has used on multiple occasions.<sup>6</sup>

Given the exigent need for a Reliability Standard like EOP-012-1, and its importance in enhancing the reliability and resilience of the Bulk Electric System (“BES”), the IRC believes that Commission specification of a date for submission of a revised version of EOP-012-1 (which the IRC proposes to be no later than November 2023) would be appropriate in this instance, as the changes proposed by the IRC herein were all discussed in the NERC standard development process. Such a specific timeframe would not contribute to any delay in the standard going into effect, as there already remains a considerable period before compliance is required under the proposed standard.

---

<sup>6</sup> See, e.g., *Mandatory Reliability Standards for the Bulk-Power Sys.*, 118 FERC ¶ 61,218, at P 1 (2007) (“Order No. 693”) (“Pursuant to section 215 of the Federal Power Act (FPA), the Commission approves 83 of 107 proposed Reliability Standards . . . . However, although we believe it is in the public interest to make these Reliability Standards mandatory and enforceable, we also find that much work remains to be done . . . . Therefore, pursuant to section 215(d)(5), we require the ERO to submit significant improvements to 56 of the 83 Reliability Standards that are being approved as mandatory and enforceable.”); *W. Elec. Coordinating Council Reg’l Reliability Standard Regarding Automatic Time Error Correction*, 127 FERC ¶ 61,176, at P 1 (2009) (“Order No. 723”) (“Pursuant to section 215 of the Federal Power Act (FPA), the Commission approves regional Reliability Standard BAL-004-WECC-01 (Automatic Time Error Correction), submitted to the Commission for approval by the North American Electric Reliability Corporation (NERC). As a separate action, pursuant to section 215(d)(5) of the FPA, the Commission directs the Western Electricity Coordinating Council (WECC) to develop several modifications to the regional Reliability Standard.”); *Transmission Relay Loadability Reliability Standard*, 130 FERC ¶ 61,221, at P 1 (2010) (“Order No. 733”) (“Pursuant to section 215 of the Federal Power Act (FPA), the Commission approves the Transmission Relay Loadability Reliability Standard (PRC-023-1), developed by the North American Electric Reliability Corporation (NERC) in its capacity as the Electric Reliability Organization (ERO) . . . . In addition, pursuant to section 215(d)(5) of the FPA, the Commission directs the ERO to develop modifications to PRC-023-1 to address specific concerns identified by the Commission and sets specific deadlines for these modifications.”).

***A. The 0.2 Percent Hourly Temperature Threshold Leads to Anomalous Results that Fail to Require Winterization Based on Reasonable Weather Conditions.***

Under proposed Reliability Standard EOP-012-1, each Generator Owner would be required to determine the “Extreme Cold Weather Temperature” (“ECWT”) for its applicable generating unit(s) (Requirement R3, Part 3.1), and to review and update that calculation every five years (Requirement R4, Part 4.1). Under the proposed standard, ECWT refers to “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.”<sup>7</sup> As demonstrated below, the IRC is concerned that the 0.2 percent hourly threshold contained within the definition of ECWT may lead to anomalous results that fail to require winterization based on realistic system conditions. To ensure that the standard reflects the reality of extreme temperatures actually experienced in the past, the IRC recommends the following changes to the proposed standard’s approach in defining and applying the ECWT:

- (i) striking the 0.2 percentile of the hourly temperatures measured in December, January, and February;
- (ii) using the lowest six hour temperature average (*e.g.*, midnight to 6 a.m., 6 a.m. to noon, noon to 6 p.m., and 6 p.m. to midnight); or
- (iii) as an alternative to the proposal embodied in (ii) above, using a 0.02 percentile.

These changes would ensure that the resulting ECWT more accurately reflects extreme cold weather temperatures actually experienced.

To demonstrate the utility of using any of the alternative thresholds proposed above, the IRC provides, as an illustration, the temperature data set below (Table A: Extreme Cold Weather

---

<sup>7</sup> Emphasis added.

Temperature Analysis), which contains multiple calculations at various weather stations within the PJM footprint:

- **Column 1 - 0.2 Percentile Temperature in Degrees Fahrenheit since 2000** is the currently written proposed ECWT for which NERC seeks adoption.
- **Column 2 - Minimum Temperature in Degrees Fahrenheit** is the actual recorded minimum temperature during the historical period from January 1, 1973 through February 28, 2022.
- **Column 3 - Average Lowest Temperature in Degrees Fahrenheit since January 1, 1973 over Six Hour Periods** is the lowest recorded average temperature across every six hour period (Night, Morning, Afternoon, Evening) of the winter months beginning on 1/1/1973 through 2/28/2022. Night=12a.m.-6a.m.; Morning=6a.m.-12p.m.; Afternoon=12p.m.-6p.m.; Evening=6p.m.-12a.m.
- **Column 4 - 0.02 Percentile Temperature in Degrees Fahrenheit since 1973** is the temperature equal to the lowest 0.02 percentile of the hourly temperatures measured in December, January, and February from 1/1/1973 through 2/28/2022 which represents one of the alternatives to the 0.2 Percentile proposed by NERC.

As illustrated by the table, data for *every single* identified weather station in PJM indicates that NERC's proposed approach of defining ECWT using the 0.2 percentile (and NERC's approach of only using data from the year 2000 forward, as described below in Section I.B) is not indicative of the *actual* extreme weather conditions that units may experience in the PJM region. This is true when comparing NERC's proposal to: (i) Column 2 – the minimum temperature during the historical period from January 1, 1973 through February 28, 2022; (ii) Column 3 – the lowest average temperature across every six hour period (Night, Morning, Afternoon, Evening) of the winter months beginning on 1/1/1973 through 2/28/2022; and (iii) Column 4 – the temperature equal to the lowest 0.02 percentile of the hourly temperatures measured in December, January, and February from 1/1/1973 through 2/28/2022. Put another way, there is an average delta of 18 degrees Fahrenheit when comparing the currently proposed ECWT with the minimum temperature

dating back to 1973; 15 degrees Fahrenheit when comparing it with an average temperature over four six-hour periods throughout the day; and 13 degrees Fahrenheit when comparing it with a 0.02 percentile.

**Table A: Extreme Cold Weather Temperature Analysis**

<b>Extreme Cold Weather Temperature Analysis</b>					
<b>Weather Station</b>	<b>Location</b>	<b>0.2 Percentile Temperature in Degrees Fahrenheit since January 2000 - current proposed ECWT</b>	<b>*Minimum Temperature in Degrees Fahrenheit since 1973</b>	<b>**Average Lowest Temperature in Degrees Fahrenheit over six hour periods since 1973</b>	<b>*0.02 Percentile Temperature in Degrees Fahrenheit since 1973</b>
ABE	Allentown Lehigh Valley International Airport	1	-13	-10	-8
ACY	Atlantic City International Airport	6	-10	-7	-6
AVP	Wilkes-Barre Scranton International Airport	-3	-20	-13	-12
BWI	Baltimore - Washington International Airport	7	-7	-5	-4
CAK	Akron Akron-Canton Regional Airport	-4	-25	-23	-20
CLE	Cleveland Hopkins International Airport	-3	-20	-18	-15
CMH	Columbus Port Columbus International Airport	-3	-22	-19	-17
CRW	Charleston Yeager Airport	2	-16	-14	-11
CVG	Cincinnati Northern KY Airport	-3	-25	-21	-20
DAY	Dayton WSO Airport	-5	-24	-23	-20
DCA	Washington Reagan National Airport	12	-5	-2	-1
ERI	Erie International Airport	-3	-18	-15	-15
EWR	Newark International Airport	6	-7	-6	-4
FWA	Fort Wayne International Airport	-10	-22	-21	-18
IAD	Washington Dulles International Airport	7	-17	-15	-8
ILG	Wilmington New Castle County Airport	7	-13	-11	-7
IPT	Williamsport Regional Airport	-1	-19	-14	-12
LEX	Lexington Bluegrass Airport	1	-20	-18	-16
MDT	Middletown Harrisburg International Airport	5	-22	-16	-9
ORD	Chicago O'Hare International Airport	-9	-26	-24	-23
ORF	Norfolk International Airport	16	-3	-1	7
PHL	Philadelphia International Airport	8	-7	-5	-3
PIT	Pittsburgh International Airport	-3	-21	-19	-17
RIC	Richmond International Airport	11	-5	-4	-1
ROA	Roanoke Regional Airport	9	-10	-10	-5
SDF	Louisville International Airport	4	-22	-19	-14
TOL	Toledo Express Airport	-8	-20	-16	-16
WAL	Wallops Island Wallops Flight Center	11	-2	0	3

\*Data analyzed is every hour of winter months (January, February, & December) beginning 1/1/1973 Through 2/28/2022

\*\*Data analyzed is the average temperature across every 6 hour period (Night, Morning, Afternoon, Evening) of the winter months beginning on 1/1/1973 through 2/28/2022. Night=12AM-6AM, Morning= 6AM-12PM, Afternoon=12PM-6PM, Evening=6PM-12AM

Additional note: Weather station SDF only has data beginning in 1980

***B. The Proposed Cut-Off at the Year 2000 for the Definition of “Extreme Cold Weather Temperature” Has Not Been Adequately Supported Based on the Record Submitted, and Represents an Overly Narrow Resolution that Ignores Cold Weather Temperatures Actually Experienced over a More Representative Time Period.***

As referenced above, under the proposed standard, ECWT refers to “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.”<sup>8</sup>

The IRC has evaluated the ECWT definition, and is concerned that *only* examining historical data from the year 2000 forward risks unnecessarily limiting the range of possible cold weather scenarios that the standard is intended to address. Per the Extreme Cold Weather Preparedness Technical Rationale and Justification for EOP-012-1, NERC’s decision to only consider historical temperatures from the year 2000 forward was based on the National Weather Service project known as MAR (Modernization and Associated Restructuring) that was completed in the year 2000.<sup>9</sup> The record on this issue is extremely thin, and the response provided by the Standard Development Team to the IRC’s concerns in this area passingly cited the MAR process, with no justification provided as to why such an extreme remedy of eliminating consideration of all pre-year 2000 data was appropriate. While the National Oceanic and Atmospheric Administration (“NOAA”) MAR effort, as described, “modernized” surface observational infrastructure by incorporating more automation, nothing in the MAR effort, or in the NERC Petition, justifies the complete elimination of *all* pre-2000 historical weather data from

---

<sup>8</sup> Emphasis added.

<sup>9</sup> See NERC Petition at 25. See also Dan Valle, *The NWS Modernization and Associated Restructuring – A Retrospective (Part 1)*, National Weather Service, <https://vlab.noaa.gov/web/nws-heritage/-/the-nws-modernization-and-associated-restructuring-a-retrospective-part-1->.

consideration.<sup>10</sup> Even assuming *arguendo* that the temperature data was less granular prior to the NOAA MAR effort, there still remains a large body of temperature data prior to the year 2000 that continues to be relied upon throughout the economy, such as by NOAA's National Center for Environmental Information Climate Monitoring,<sup>11</sup> by the agriculture industry,<sup>12</sup> and for flood control.<sup>13</sup>

The impact of the year 2000 cut-off is real in imposing blinders on conditions that occurred even in the recent past, and has the effect of forcing the Commission to assume, without any basis, that those pre-2000 conditions will simply not re-occur. As one example of the arbitrary nature of this proposal, PJM experienced extreme temperatures during a significant cold wave in January of 1994. The very conditions that the winterization standard is designed to address, such as failures of generation to start, were experienced on a widespread basis in PJM in 1994, bringing the region to the brink of large-scale curtailments. Yet the proposal would simply tell generators to ignore that real experience, and only winterize to higher temperature levels and less extreme conditions than were experienced just years before, with little record justification. In short, limiting the look back to the year 2000 based on the thin record on this issue would ignore relatively recent events. The IRC believes that, should the Commission find merit in NERC's argument concerning the

---

<sup>10</sup> The NOAA website notes that the MAR process allowed for greater automation of the NOAA processes and improved forecasting data for storms. But nowhere does NOAA raise questions as to the usefulness of its temperature data prior to the initiation of the MAR process. *See id.*

<sup>11</sup> National Centers for Environmental Information, *Climate Monitoring*, <https://www.ncei.noaa.gov/access/monitoring/products/#temp>.

<sup>12</sup> EOS Data Analytics, *Weather In Agriculture: Accuracy Promotes Success* (Jan. 26, 2021), <https://eos.com/blog/weather-in-agriculture/>.

<sup>13</sup> Joan O'Brien, *Historical Weather Data Rescue: Baseline for Transformative Action*, International Environmental Data Rescue Organization (May 5, 2012), <https://iedro.org/news/historical-weather-data-rescue-baseline-transformative-action/>.



NOAA MAR process, there are far less drastic and arbitrary remedies than a blanket cut-off at the year 2000.<sup>14</sup>

***C. The Commission Should Direct NERC to Revise EOP-012-1 to Increase Stringency on Generator Owners Regarding the Implementation of Freeze Protection Measures.***

Requirement R1 of EOP-012-1 requires generating units to either implement freeze protection measures that allow the unit to run during the defined ECWT or else declare “any technical, commercial, or operational constraints, as defined by the Generator Owner,” that preclude the Generator Owner’s ability to implement appropriate freeze protection measures.

**R1.** For each generating unit(s) with a commercial operation date subsequent to [Effective Date of this requirement], the Generator Owner shall:[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]

- Implement freeze protection measures that provide capability to operate for a period of not less than twelve (12) continuous hours at the Extreme Cold Weather Temperature for the unit(s), assuming a concurrent twenty (20) mph wind speed on any exposed Generator Cold Weather Critical Components; or
- *Explain in a declaration any technical, commercial, or operational constraints, as defined by the Generator Owner, that preclude the ability to implement appropriate freeze protection measures to provide capability of operating for twelve (12) hours at the documented Extreme Cold Weather Temperature. (emphasis added)*

Similarly, Requirement R7 of EOP-012-1 requires a Generator Owner to implement each CAP, “or explain in a declaration why corrective actions are not being implemented due to any technical, commercial, or operational constraints as defined by the Generator Owner.”

**R7.** Each Generator Owner shall:

**7.1** *Implement each CAP developed pursuant to Requirements R2, R4, or R6, or explain in a declaration why*

---

<sup>14</sup> For example, the pre-Order 2000 data could be weighted differently than the more recent data. But rather than exploring this kind of remedy, the proposed standard simply adopts a blanket unjustified cut-off at the year 2000.

*corrective actions are not being implemented due to any technical, commercial, or operational constraints as defined by the Generator Owner. (emphasis added).*

The IRC is concerned with the language in Requirement R1 and R7 on several grounds. First, the IRC is concerned that, as presently drafted, Requirements R1 and R7 provide a broad “opt-out” for units based on *the Generator Owner’s* determination and assessment of a “commercial” constraint. Given that it is not at all clear how costly a measure must be before it presents a “commercial” constraint, or how any such standard could be fairly applied both to independent power producers and to vertically integrated utilities subject to rate regulation, the IRC is concerned that these requirements as drafted will encourage generators to avoid making improvements, particularly if a competitor elects to utilize this “opt-out” to gain a competitive advantage by avoiding the capital expenditures necessary for compliance. The IRC is concerned that this may ultimately leave the BES no more resilient than before the proposed Reliability Standard was effective. In short, the broad undefined ‘commercial’ exemption could lead to the exception swallowing the rule.

Second, neither Requirement 1 nor Requirement 7 identify *to whom* the Generator Owner is supposed to provide the declaration. The IRC recommends that the Generator Owner provide declarations to the Balancing Authority so that it is aware of a potential vulnerability in the generation supply.

Third, using the phrase “as defined by the Generator Owner” in Requirement R1 and R7 gives the Generator Owner absolute discretion to determine what constraints are valid. Generator Owners may have a wide perspective on what constitutes a “commercial” constraint, and it is unclear if Regional Entities, given their functions and expertise, would be able to appropriately assess and audit whether a Generator Owner’s declared “commercial” constraint was reasonable,

given that term’s extraordinarily broad and subjective range. The IRC believes that the term “commercial” should be removed. The IRC also recognizes that asset owners are concerned about the costs related to the proposed Reliability Standard (both the actual capital expenditures and the compliance costs). The IRC acknowledges the cost impacts and believes that asset owners should have a path to cost recovery. This is an important regulatory issue that should be considered, accounting for existing tariff provisions.

Fourth, Requirement R7 requires each Generator Owner to implement each Corrective Action Plan, but does not explain when such implementation must occur, or the criteria by which the quality of a Corrective Action Plan should be judged.

The IRC believes that these items in Requirements R1 and R7 must be addressed if EOP-012-1 is to have the impact on resilience and reliability that the Standard Drafting Team intended.

***D. The Commission Should Direct NERC to Strengthen the Obligation to Develop a Corrective Action Plan.***

EOP-012-1, Requirement 6 requires a generating unit to develop a Corrective Action Plan *only* when the temperature is *at or above* its ECWT. This is due to Corrective Action Plans only being required if a generator experiences a Generator Cold Weather Reliability Event (“GCWRE”).<sup>15</sup> The Corrective Action Plan no longer applies if a generating unit’s Forced Outage/derate occurred when the temperature was *below* its ECWT. During the NERC presentation on August 16, 2022, the Standard Drafting Team presented the ECWT for the Dallas

---

<sup>15</sup> As proposed, “Generator Cold Weather Reliability Event” refers to “one of the following events for which the apparent cause(s) is due to freezing of 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 and exceeding 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.” (emphasis added).

Texas area as 12 degrees Fahrenheit.<sup>16</sup> The actual temperature in the Dallas area during Winter Storm Uri was negative (-2) degrees Fahrenheit.<sup>17</sup> As a result, using the example relied on by NERC, any units experiencing a Forced Outage/derate would not be subject to developing a Corrective Action Plan, since the actual temperature was below the generating unit's ECWT.

Further, MISO examined two cities within its footprint – Lake Charles, Louisiana (“LCH”) and Little Rock, Arkansas (“LIT”), which were both adversely affected during Winter Storm Uri. For LCH, the proposed ECWT would be 24.98 degrees Fahrenheit. However, when reviewing the hourly data from December 1991 to February 2022, there were 206 hours that *meet or fall below* the ECWT over thirty-eight days and twenty-five events. Similarly, LIT also had sixteen hours during Winter Storm Uri where a Corrective Action Plan requirement based upon the proposed ECWT would be excluded. The proposed ECWT for LIT is 12.92 degrees Fahrenheit. However, in the hourly data from December 1991 to February 2022, 183 hours *meet or fall below* that ECWT over thirty-two days and twenty-one events. LIT also had fifty-seven hours during Winter Storm Uri that the proposed ECWT would exclude from triggering a Corrective Action Plan.

These problems with the proposed ECWT definition, when coupled with the fact that a Corrective Action Plan is not required for any GCWRE that occurs at a temperature below the proposed ECWT, leave a host of situations, including those experienced during Winter Storm Uri, when no Corrective Action Plan is required. While the minimum temperature to which generators must winterize to must be defined, that definition should take into account actual weather data and

---

<sup>16</sup> NERC, *Project 2021-07: Extreme Cold Weather Grid Operations, Preparedness and Coordination – Industry Webinar* (Aug. 16, 2022), [https://www.nerc.com/pa/Stand/Project202107ExtremeColdWeatherDL/2021-07%20Second%20Ballot%20Industry%20Webinar\\_082022.pdf](https://www.nerc.com/pa/Stand/Project202107ExtremeColdWeatherDL/2021-07%20Second%20Ballot%20Industry%20Webinar_082022.pdf).

<sup>17</sup> *Id.* at Slide 18.

conditions, as discussed in Sections I.A and I.B. In the IRC’s view, this is not reasonable from a reliability viewpoint, and illustrates the IRC’s concern with the ECWT definition and its application in the proposed Standard.

***E. The Commission Should Direct NERC to Clarify how the Requirement that Generating Units Perform at or below the Extreme Cold Weather Temperature for Twelve Hours Interacts with Obligations Applicable for Periods Longer than Twelve Hours.***

Requirement R1 of EOP-012-1 requires generating units to perform at or below the Extreme Cold Weather Temperature for twelve hours.

**R1.** For each generating unit(s) with a commercial operation date subsequent to [Effective Date of this requirement], the Generator Owner shall:[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]

- *Implement freeze protection measures that provide capability to operate for a period of not less than twelve (12) continuous hours at the Extreme Cold Weather Temperature for the unit(s), assuming a concurrent twenty (20) mph wind speed on any exposed Generator Cold Weather Critical Components; or*
- Explain in a declaration any technical, commercial, or operational constraints, as defined by the Generator Owner, that preclude the ability to implement appropriate freeze protection measures to provide capability of operating for twelve (12) hours at the documented Extreme Cold Weather Temperature. (emphasis added)

As written, this language links a unit’s obligation to winterize with an obligation to provide the capability to operate for a minimum twelve-hour period. Yet it is unclear how this twelve-hour obligation is intended to synchronize with other obligations outside of the proposed standard that may be applicable for regions that experience extreme winter temperatures for *longer* than a twelve-hour period. While the IRC recognizes that Requirement R1 is not intended as a “must-run” requirement and is strictly a benchmark to implement freeze protection measures, the IRC is concerned that this linkage, established under the Commission’s reliability jurisdiction

(FPA, section 215)<sup>18</sup> via a Reliability Standard, creates the potential for inconsistency and ambiguity with generator obligations separately established under the Commission’s rate jurisdiction (FPA, section 201),<sup>19</sup> via Commission approved tariffs, or obligations separately arising under state or local law. For example, in PJM, units with capacity obligations are required to perform whenever called upon by PJM during a declared system emergency (which may exceed twelve hours), and are subject to significant penalties if they do not perform during the hours when they can be called upon. Similarly, in ISO-NE, units with capacity obligations are required to perform and provide reserves during a capacity scarcity event, which may exceed twelve hours.

The IRC notes that NERC previously addressed this concept in the “applicability” section of EOP-012-1, by explicitly contemplating “a tariff obligation, state requirement as defined by the relevant electric regulatory authority, or other contractual arrangement, rule, or regulation.”

#### **4.2. Facilities:**

**4.2.1** 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 unit that commits or is obligated to serve a Balancing Authority load pursuant to a tariff obligation, state requirement as defined by the relevant electric regulatory authority, or other contractual arrangement, rule, or regulation, for a continuous run of four hours or more at or below a temperature of 32 degrees Fahrenheit (zero degrees Celsius); (emphasis added)*

While this broad acknowledgement of obligations outside of the standard is helpful with respect to the definition of “generating unit,” the IRC recommends that the Commission direct NERC to

---

<sup>18</sup> 16 U.S.C. § 824o.

<sup>19</sup> 16 U.S.C. § 824.

provide greater clarity regarding how the individual Requirements under the proposed standard are intended to interact with these external obligations.

***F. The Commission Should Direct NERC to Revise the Proposed Implementation Plan for EOP-012-1.***

The proposed implementation plan provides a “step-wise” approach which would have the proposed Reliability Standards become effective on the first day of the first calendar quarter that is eighteen (18) months after applicable regulatory approval. Generator Owners would have an additional forty-two (42) months from the effective date of proposed Reliability Standard EOP-012-1 to come into compliance with the new freeze protection measures requirements in Requirements R1 and R2, and sixty (60) months from the effective date to perform their first five-year update of the ECWT.

The IRC is concerned that this proposed implementation plan could discourage earlier compliance, and therefore delay the realization of benefits to BES resiliency and reliability. Specifically, many units compete in wholesale markets administered by IRC members, and it is reasonable to presume that a unit owner may be incentivized to refrain from making capital expenditures earlier than its competitors who delay compliance to later dates, out of fear that these competitors may gain a competitive advantage by deferring the actualization of EOP-012-1 compliance costs in their market bids. In this way, the implementation timeline proposed for EOP-012-1 may very well *disincentivize* early compliance.

The IRC understands the need to recognize the complexities of winterization for different technologies and individual unit characteristics. However, to avoid creating disincentives to earlier compliance, the IRC recommends a shorter period of twelve (12) months to identify the ECWT and develop a winterization plan, and an additional twenty-four (24) months for all units (new and old) to comply with the winterization requirements. The IRC also recommends adding

an exception process to the extent that a Generator Owner's documentation of compliance may take longer due to an individual unit's characteristics. The IRC believes that a Generator Owner should be required to document unit-specific exceptions and make the documentation available for review and audit. The shorter time period, coupled with an exceptions process for units that legitimately need more time, would avoid the disincentives for early compliance that exist under the proposed standard and its implementation timeline.

***G. The Commission should direct NERC to Revise the Proposed Definition of "Generator Cold Weather Reliability Event."***

As referenced above, NERC proposes to define "Generator Cold Weather Reliability Event" ("GCWRE") as "one of the following events for which the apparent cause(s) is due to freezing of 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 and exceeding 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."<sup>20</sup>

The 20 MW limitation on Corrective Action Plans in the GCWRE definition, where a forced derate is more than ten percent of the total capacity of the unit and exceeding 20 MW for longer than four hours in duration, does not sufficiently address situations where there is a failure of multiple individual generating units under common ownership (such as a wind farm) that in the aggregate could have a significant reliability impact. As currently written, generating units rated at 200 MW or less would not be included in requiring a Corrective Action Plan for forced derates of ten percent. Specifically, for ten percent of a unit capacity to exceed 20 MW, the unit must have a nameplate capacity of at least 201 MW (*i.e.*, ten percent of 201 MW equals 20.1 MW). The

---

<sup>20</sup> Emphasis added.



IRC recommends that the GCWRE definition be revised to make clear that a plant or facility consisting of individual units less than 200 MW will be considered aggregated to meet the 10 percent and 20 MW threshold.<sup>21</sup>

---

<sup>21</sup> For example, for a plant consisting of five 190 MW generating units (total 950 MW) each generating unit experiencing a ten percent derate (19 MW) would aggregate the unit derates to determine whether the 20 MW threshold is met, and in this example, the 19 MW derate of each unit would be 19 MW times 5 units equals 95 MW; by aggregating the units, the standard would now apply as 95 MW is greater than 20 MW.

## II. CONCLUSION

In accordance with the foregoing, the IRC respectfully requests that the Commission issue an order: (i) approving EOP-011-3 and EOP-012-1 as drafted; (ii) simultaneously invoking the Commission's authority under FPA section 215(d)(5) to direct NERC to revise EOP-012-1 to address the important considerations described herein; and (iii) directing NERC to submit a revised version of EOP-012-1 to the Commission by no later than November 2023.

Respectfully submitted,

/s/ Margo Caley

Maria Gulluni  
Vice President & General Counsel  
Margo Caley  
Chief Regulatory Compliance Counsel  
**ISO New England Inc.**  
One Sullivan Road  
Holyoke, Massachusetts 01040  
[mcaley@iso-ne.com](mailto:mcaley@iso-ne.com)

/s/ Andrew Ulmer

Roger E. Collanton  
General Counsel  
Anthony Ivancovich  
Deputy General Counsel, Regulatory  
Andrew Ulmer  
Assistant General Counsel  
**California Independent System Operator Corporation**  
250 Outcropping Way  
Folsom, California 95630  
[aulmer@caiso.com](mailto:aulmer@caiso.com)

/s/ Thomas DeVita

Craig Glazer  
Vice President-Federal Government Policy  
Thomas DeVita  
Assistant General Counsel  
**PJM Interconnection, L.L.C.**  
2750 Monroe Blvd.  
Audubon, PA 19403  
Ph: (610) 666-8248  
Fax: (610) 666-8211  
[thomas.devita@pjm.com](mailto:thomas.devita@pjm.com)

/s/ Raymond Stalter

Robert E. Fernandez  
Executive Vice President and General Counsel  
Raymond Stalter  
Director of Regulatory Affairs  
**New York Independent System Operator, Inc.**  
10 Krey Boulevard  
Rensselaer, NY 12144  
[rstalter@nyiso.com](mailto:rstalter@nyiso.com)

/s/ Michael Kessler

Michael Kessler  
Managing Assistant General Counsel  
**Midcontinent Independent System  
Operator, Inc.**  
720 City Center Drive  
Carmel, Indiana 46032  
Telephone: (317) 249-5400  
Fax: (317) 249-5912  
[mkessler@misoenergy.org](mailto:mkessler@misoenergy.org)

/s/ Chad V. Seely

Chad V. Seely  
Vice President & General Counsel  
Nathan Bigbee  
Deputy General Counsel  
**Electric Reliability Council of Texas, Inc.**  
8000 Metropolis Drive, Bldg. E, Suite 100  
Austin, Texas 78744  
[chad.seely@ercot.com](mailto:chad.seely@ercot.com)

/s/ Beverly Nollert

Beverly Nollert  
Senior Manager, Regulatory Affairs  
**Independent Electricity System Operator**  
1600-120 Adelaide Street West  
Toronto, Ontario M5H 1T1  
[beverly.nollert@ieso.ca](mailto:beverly.nollert@ieso.ca)

/s/ Paul Suskie

Paul Suskie  
Executive Vice President & General Counsel  
**Southwest Power Pool, Inc.**  
201 Worthen Drive  
Little Rock, Arkansas 72223-4936  
[psuskie@spp.org](mailto:psuskie@spp.org)

/s/ Diana Wilson

Diana Wilson  
Director Enterprise Risk Management and  
Compliance  
**Alberta Electric System Operator**  
#2500, 330 – 5 Avenue SW  
Calgary, Alberta T2P 0L4  
[diana.wilson@aeso.ca](mailto:diana.wilson@aeso.ca)