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I. SUMMARY

Over the past twelve years, NERC and FERC staff have initiated inquiries into five events where cold weather has caused effects to the Bulk Electric System (“BES”) generation, with four of those events resulting in the need for firm load shed.⁴ Based on the recommendations resulting from these inquiries, the ERO Enterprise and FERC have initiated several types of activities, such as Reliability Standards development, NERC Alerts issuances, and entity assist visits, among others, to support industry in extreme cold weather preparedness. In addition, the ERO Enterprise is preparing a broad and comprehensive strategy for coordinating its cold weather activities, including assessing the implementation of Reliability Standards addressing cold weather over the next several years as part of robust compliance monitoring. Along those lines, in the February 16 Order, the Commission directed NERC to work with Commission staff to develop a plan to collect data on the winterization of generating units and to submit an annual informational filing on the analysis of the data. This compliance filing provides the plan for collecting the data and performing the analysis on that data.

The plan divides its data collection into the data that will be included in each annual information filing, the first of which will be submitted on October 1, 2025. In so doing, NERC will be able to focus on analyzing data, collected through a NERC Rules of Procedure Section 1600 data request, while cold weather Reliability Standards are still in implementation stage prior to their effective dates. In subsequent filings, starting with the annual information filing submitted on October 1, 2026, NERC anticipates continuing to collect data not submitted as compliance evidence while also considering whether to initiate any compliance monitoring data

⁴ FERC, NERC, and Regional Entity Staff Report, *Inquiry into Bulk-Power System Operations During December 2022 Winter Storm Elliott*, FERC-NERC and Regional Entity Staff Report (Oct. 2023), at pp. 12-14, available at <https://www.ferc.gov/media/winter-storm-elliott-report-inquiry-bulk-power-system-operations-during-december-2022>.

requests (such as a periodic data submittal) to supplement analysis into the efficacy of cold weather Reliability Standards. In the future, NERC will consider the use of existing processes (such as the collection of data through the Generator Availability Database System (“GADS”)) in order to support the sustainability of the data collection and analysis.

II. NOTICES AND COMMUNICATIONS

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III. BACKGROUND

In the February 16 Order, the Commission approved proposed Reliability Standards EOP-011-3 and EOP-012-1. Reliability Standard EOP-012-1 is a new standard that includes requirements for freeze protection measures for both new and existing generation, the development of enhanced cold weather preparedness plans with annual training on those plans, and the development and implementation of Corrective Action Plans to address freezing issues. Reliability Standard EOP-011-3 refines upon the enhancements in Reliability Standard EOP-011-2⁵ to improve how Transmission Operators account for the overlap of manual load shed and automatic load shed in their emergency Operating Plans. The Commission also directed NERC

⁵ In 2021, NERC took an important first step to assure the reliability of the Bulk-Power System in future winter seasons through the development of the first cold weather Reliability Standards, Reliability Standards EOP-011-2 (Emergency Preparedness and Operations), IRO-010-4 (Reliability Coordinator Data Specification and Collection), and TOP-003-5 (Operational Reliability Data).

to develop further revisions to EOP-012-1 and its implementation plan. In response, the standard drafting team for Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination developed revisions to EOP-012-1, and NERC filed the revisions in a separate docket in February 2024.

In addition to the Reliability Standards revision directive, the Commission directed NERC to work with Commission staff to develop a plan, to be submitted by February 16, 2024, to collect data on the winterization of generating units and to submit an annual informational filing on the analysis of the data starting on October 1, 2025. Specifically, the Commission directed NERC to collect data and submit analysis that will allow the Commission to understand the efficacy of, and monitor the ongoing risk posed by: (1) technical, commercial, or operational constraint provisions in EOP-012-1, Requirements R1, R6, and R7;⁶ and (2) actual performance of freeze protection measures during future extreme cold weather events.⁷

IV. COLD WEATHER DATA COLLECTION PLAN

The following plan details how the ERO Enterprise will collect data on generator constraints and the performance of freeze protection measures in future cold weather events. Given the effective date and implementation timing of EOP-012,⁸ the plan includes different data collection methods that reflect the possibility of collecting compliance data in subsequent years. To that end, the plan outlines first the data collection methods for the annual report due to the

⁶ The revisions to EOP-012-1 filed in February 2024 with the Commission changed the constraints provisions.

⁷ February 16 Order at P 94.

⁸ For the remainder of this filing, NERC will use “EOP-012” to encompass both Reliability Standard EOP-012-1 and proposed Reliability Standard EOP-012-2 as the version of the standard will change during the execution of this data collection plan. In seeking FERC approval of proposed Reliability Standard EOP-012-2 in a separate docket, NERC has requested expedited action in that proceeding to allow Reliability Standard EOP-012-1 to be superseded by proposed Reliability Standard EOP-012-2 prior to the first version ever becoming effective. Under the proposed implementation plan for Reliability Standard EOP-012-2, Reliability Standard EOP-012-2 would become effective on the later of October 1, 2024 (effective date of EOP-012-1), or the first day of the first calendar quarter that is three (3) months following regulatory approval.

Commission on October 1, 2025 and then outlines additional data collection methods that may be used for the annual informational filing due to FERC on October 1, 2026 and thereafter. Depending on the stage of implementation of Reliability Standards addressing cold weather, NERC may not be able to collect all the requested data for the first annual informational filing. Consistent with the February 16 Order directive, NERC worked with Commission staff on the details and timing of the plan.

a. Data Collection for Annual Report Submitted on October 1, 2025

Consistent with the February 16 Order,⁹ NERC plans to issue a data request to generator owners pursuant to NERC's authority in NERC Rules of Procedure Section 1600. Under the provisions of Section 1600, NERC and the Regional Entities may request data or information that is necessary to meet their obligations under Section 215 of the Federal Power Act, as authorized by Section 39.2(d) of the Commission's regulations. Such a request does not apply to data collection requirements in Reliability Standards, nor does it apply to data or information requested in connection with a compliance or enforcement action. As such, NERC will draft the data request to collect information to inform its analysis on the efficacy of, and ongoing risk posed by, certain constraints provisions in EOP-012 and the performance of freeze protection measures during future extreme cold weather events. NERC and the Regional Entities may consider the aggregate risk identified in the analysis of the data to determine any future events analysis or compliance monitoring and enforcement activities, as appropriate.

NERC plans to include the following items in the data request at a minimum, although the request may be solicited on a unit basis and then aggregated by NERC during analysis (e.g., NERC will aggregate total number of megawatts):

⁹ February 16 Order at P 11.

- Generating unit GADS identifier;
- NERC Compliance Registry identification;
- Balancing Authority Area and Assessment Area;¹⁰
- Zip code of the unit;
- Generating units that have declared constraints under EOP-012 and the megawatts of generation that they represent;
- The constraint declaration type;
- Rationale(s) for each declaration selected from a standardized list of options in the data request;
- Megawatts of generation within the generation owner/operator's fleet currently capable of operating at each unit's Extreme Cold Weather Temperature;
- Projected megawatts for which the generator owner/operator expects to complete corrective action plans for each year;
- Projected megawatts for which the generator owner/operator expects to implement corrective action plans for each year and the expected completion;
- Number of Generator Cold Weather Reliability Events experienced in the previous winter, if any; and
- Megawatts of generating units identified as "similar equipment" to which the generator owner has determined that the cause(s) for the Generator Cold Weather Reliability Event are also applicable, under EOP-012 Requirement R6, Part 6.2, while also identifying any similar equipment that will receive a declaration.

In addition to the minimum contents of the data request above, NERC will consider adding weather data for each unit in the proposed data request. For instance, NERC will consider collecting the minimum and maximum operating temperature for each unit or the Extreme Cold Weather Temperature as determined by the entity. Collecting a temperature data point will help NERC and the Regional Entities to understand the operating capabilities of each unit in varying temperatures.

NERC plans to develop the Section 1600 data request based on the following tentative timeline, although exact dates may be subject to change:

¹⁰ The Assessment Areas, as of July 2019, are available at <https://www.nerc.com/AboutNERC/keyplayers/PublishingImages/NERC%20Assessment%20Areas.png>.

Date	Action
February-April 2024	ERO Enterprise drafts data request
May 2024	NERC provides to FERC Office of Electric Reliability for 21 days for FERC information
June to July 2024	Post for 45-day comment period
August-September 2024	Review comments and revise as appropriate
December 2024	NERC Board authorization
January 2025	Issue data request
May 2025	Responses due

Once NERC receives the data from the Section 1600 request, NERC plans to analyze the data in the following manner, incorporating the analysis into existing mechanisms under the Rules of Procedure and using data collected through GADS. NERC would first look to possible impacts to total winter capacity for an area of generation that has a Corrective Action Plan (as used in EOP-012) developed but not implemented or completed. Within that population of generation, NERC staff within the performance analysis department will review the constraints declarations reported by entities to determine whether there are outliers in the use of certain categories of constraints, particularly those categorized by cost. Outliers may be determined, for example, by a relatively large number of declared constraints for one Assessment Area as compared to other Assessment Areas. NERC will compare the constraints data to the reported outage data to determine if any Assessment Area is at heightened risk of a large number of outages during cold weather. NERC will review whether there is an impact of declared constraints on the Assessment Area’s or Balancing Authority’s total available winter capacity. Should NERC identify any areas of risk, NERC performance analysis may refer the issue to NERC Compliance Assurance to review the efficacy of the Reliability Standards language.

For evaluation of performance of freeze protection measures during future extreme cold weather events, NERC plans to use existing data in GADS, including the newly implemented “Contributing Operating Condition” field permitting identification of “Cold Weather

Conditions” as a contributing factor in a forced outage, in combination with the data collected under the Section 1600 request referenced in this filing. Once data for the winter is collected in May 2025,¹¹ NERC proposes calculating the outage rates for each area assessed due to cold weather for the past winter. To do so, NERC will first look to see if there were any spikes in outages for a particular area due to Contributing Operating Conditions related to cold weather conditions. Based on performance of certain generation in past storms (e.g., freezing precipitation where wind may go offline), NERC will determine if such a spike is an expected outcome. If any spikes are identified, NERC will compare the outage rates within the area assessed to similar past cold weather events with the expectation that the outage rate should have improved with the implementation of cold weather Reliability Standards. If no similar past cold weather events have occurred, existing information will be examined and scaled when possible for comparison. If NERC does not see an improvement, NERC may refer the matter to the Events Analysis team under Section 800 or the NERC Compliance Assurance department to determine next steps. Should NERC not identify any spikes in outage data related to cold weather, NERC will rely on meteorological data for the past winter to determine whether an area experienced significantly lower than average temperatures or other notable extreme cold weather conditions (e.g., freezing precipitation) or whether it was a relatively mild winter compared to past significant winter storms. If the former, NERC could conclude that freeze protection measures are operating as intended, and if the latter, NERC would note that there is no further analysis needed on the freeze protection measures but that NERC could not conclude whether the measures were performing as intended due to a mild winter for a particular area. In addition, NERC will use the most recent review of Bulk Power System performance during cold weather

¹¹ GADS data is available 45 days after the end of a quarter, which is May 15 for the first quarter data, and the data request responses are due in May.

to further inform the analysis outlined in this plan.¹² NERC will use the data and analysis in the October 1, 2025 report to establish a starting point for future performance analysis comparison.

b. Data Collection for Annual Report Submitted on October 1, 2026

NERC plans to continue collection of data under the Section 1600 request referenced in this filing for the 2026 report. NERC may consider adding compliance monitoring data collection under Section 400 should the data collected through the Section 1600 request and GADS indicate that NERC may need to further assess the efficacy of Reliability Standards language. For instance, NERC may issue a periodic data submittal to sample Corrective Action Plans to determine if entities are planning to correct for constraints. Similarly, NERC may determine to review the rationale behind certain categories of constraints.

NERC asserts that the level of analysis that this data provides is sufficient for monitoring the on-going risk related to cold weather preparedness. If trends identified in actual performance of freeze protection measures or the use of constraints indicate unacceptable levels of risk, then additional activities under Section 800 or under the Compliance Monitoring and Enforcement Program (“CMEP”) would be necessary to determine the specific root cause and mitigation (if appropriate).

c. Subsequent Annual Report Data Collections

Once NERC collects data for the 2025 and 2026 informational filings, NERC can determine trends in the performance of generating units. In past cold weather events, NERC has observed that freeze issues were one of the main three causes of unplanned outages.¹³ As such,

¹² FERC, NERC and the Regional Entities recently announced a joint review of the performance of the BPS during winter storms in January 2024. *See FERC, NERC to Review Bulk Power System Performance During Recent Winter Storms*, News Release available at <https://www.nerc.com/news/Pages/FERC,-NERC-to-Review-Bulk-Power-System-Performance-During-Recent-Winter-Storms-.aspx>.

¹³ FERC, NERC, and Regional Entity Staff Report, *Inquiry into Bulk-Power System Operations During December 2022 Winter Storm Elliott*, *FERC-NERC and Regional Entity Staff Report* (Oct. 2023), available at

similar to its monitoring of misoperations data,¹⁴ NERC will expect to see an improvement in outages, and perhaps eventually a stabilization of the outage rate. In addition, NERC will consider whether the Section 1600 data request referenced in this filing should be incorporated into GADS or whether it should continue to be a standalone request. The data collection and reporting described in this plan will provide meaningful metrics to determine the effectiveness of cold weather preparedness activities going forward.

<https://www.ferc.gov/media/winter-storm-elliott-report-inquiry-bulk-power-system-operations-during-december-2022>; FERC, NERC Regional Entity Staff Report: *The February 2021 Cold Weather Outages in Texas and the South Central United States* (Nov. 2021), available at <https://www.ferc.gov/media/february-2021-cold-weather-outages-texas-and-south-central-united-states-ferc-nerc-and>.

¹⁴ Protection System Operations and Misoperations are reported by Transmission Owners, Generator Owners, and Distribution Providers via the Misoperation Information Data Analysis System (MIDAS) Portal in response to a Section 1600 data request. As an example of this analysis, the 2023 State of Reliability Report states, “By evaluating the annual misoperation rates across North America and separately for each Regional Entity over the last five years and comparing the misoperation rate of the first four years with the most recent year, a statistically significant decreasing trend can be observed in the misoperation rates for RF and the overall MIDAS data reported to NERC.” NERC, *2023 State of Reliability Technical Assessment* (June 2023), at p. 56 (internal citation omitted), available at https://www.nerc.com/pa/RAPA/PA/Performance%20Analysis%20DL/NERC_SOR_2023_Technical_Assessment.pdf.

V. CONCLUSION

NERC respectfully requests that the Commission accept this compliance filing in satisfaction of the directive in the February 16 Order to develop a plan regarding cold weather data collection and analysis.

Respectfully submitted,

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