

Agenda Board of Trustees

May 11, 2023 | 10:00 a.m.-12:00 p.m. Eastern
Hybrid Meeting

In-Person (*Board, MRC, NERC Staff ONLY*)

NERC DC Office
1401 H Street NW, Suite 410
Washington, DC 20005

Virtual Attendees (*including presenters*)

Webinar Link: [Join Meeting](#)
Password: BoardMay2023 (26273620 from phones and video systems)

Call to Order

NERC Antitrust Compliance Guidelines*

Introduction and Chair's Remarks

Consent Agenda – Approve

1. **Minutes***
 - a. February 16, 2022 Meeting
2. **Committee Membership***
 - a. Compliance and Certification Committee Membership

Regular Agenda

3. **Remarks and Reports**
 - a. Remarks by Jen Easterly, Director, CISA, DHS
 - b. Remarks by Patricia Hoffman, Principal Deputy Assistant Secretary for the Office of Electricity, DOE
 - c. Remarks by David Morton, Chair, CAMPUT
 - d. President's Report
 - e. Report on the May 9 and 11, 2023 Closed Meetings
4. **Board Committee Reports**
 - a. Corporate Governance and Human Resources
 - b. Compliance
 - c. Finance and Audit

- d. Enterprise-wide Risk
- e. Technology and Security
- f. Nominating
- g. Report by Sue Kelly on Standards
- h. Report by Rob Manning on RSTC Quarterly Activities

BREAK – 15 MINS

5. Standards Quarterly Report and Actions*

- a. Texas Reliability Entity Regional Standards Development Process – **Approve**
- b. Standards Process Improvement Opportunities – **Update**
- c. Inverter-Based Resources Work Plan – **Update**
- d. Cold Weather Standards Status – **Update**

6. Other Matters and Reports

- a. Input Letter and Member Representatives Committee Meeting – **Discussion**
- b. Level 3 Alert Essential Actions to Industry: Cold Weather Preparations for Extreme Weather Events III* – **Approve**
- c. Internal Network Security Monitoring Data Request* – **Authorize**

7. Other Matters and Adjournment

*Background materials included.

NERC Antitrust Compliance Guidelines

I. General

It is NERC's policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition. This policy requires the avoidance of any conduct that violates, or that might appear to violate, the antitrust laws. Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition.

It is the responsibility of every NERC participant and employee who may in any way affect NERC's compliance with the antitrust laws to carry out this commitment.

Antitrust laws are complex and subject to court interpretation that can vary over time and from one court to another. The purpose of these guidelines is to alert NERC participants and employees to potential antitrust problems and to set forth policies to be followed with respect to activities that may involve antitrust considerations. In some instances, the NERC policy contained in these guidelines is stricter than the applicable antitrust laws. Any NERC participant or employee who is uncertain about the legal ramifications of a particular course of conduct or who has doubts or concerns about whether NERC's antitrust compliance policy is implicated in any situation should consult NERC's General Counsel immediately.

II. Prohibited Activities

Participants in NERC activities (including those of its committees and subgroups) should refrain from the following when acting in their capacity as participants in NERC activities (e.g., at NERC meetings, conference calls and in informal discussions):

- Discussions involving pricing information, especially margin (profit) and internal cost information and participants' expectations as to their future prices or internal costs.
- Discussions of a participant's marketing strategies.
- Discussions regarding how customers and geographical areas are to be divided among competitors.
- Discussions concerning the exclusion of competitors from markets.
- Discussions concerning boycotting or group refusals to deal with competitors, vendors or suppliers.
- Any other matters that do not clearly fall within these guidelines should be reviewed with NERC's General Counsel before being discussed.

III. Activities That Are Permitted

From time to time decisions or actions of NERC (including those of its committees and subgroups) may have a negative impact on particular entities and thus in that sense adversely impact competition. Decisions and actions by NERC (including its committees and subgroups) should only be undertaken for the purpose of promoting and maintaining the reliability and adequacy of the bulk power system. If you do not have a

legitimate purpose consistent with this objective for discussing a matter, please refrain from discussing the matter during NERC meetings and in other NERC-related communications.

You should also ensure that NERC procedures, including those set forth in NERC's Certificate of Incorporation, Bylaws, and Rules of Procedure are followed in conducting NERC business.

In addition, all discussions in NERC meetings and other NERC-related communications should be within the scope of the mandate for or assignment to the particular NERC committee or subgroup, as well as within the scope of the published agenda for the meeting.

No decisions should be made nor any actions taken in NERC activities for the purpose of giving an industry participant or group of participants a competitive advantage over other participants. In particular, decisions with respect to setting, revising, or assessing compliance with NERC Reliability Standards should not be influenced by anti-competitive motivations.

Subject to the foregoing restrictions, participants in NERC activities may discuss:

- Reliability matters relating to the bulk power system, including operation and planning matters such as establishing or revising Reliability Standards, special operating procedures, operating transfer capabilities, and plans for new facilities.
- Matters relating to the impact of Reliability Standards for the bulk power system on electricity markets, and the impact of electricity market operations on the reliability of the bulk power system.
- Proposed filings or other communications with state or federal regulatory authorities or other governmental entities.
- Matters relating to the internal governance, management and operation of NERC, such as nominations for vacant committee positions, budgeting and assessments, and employment matters; and procedural matters such as planning and scheduling meetings.

Draft Minutes Board of Trustees

February 16, 2023 | 9:30 a.m.–12:00 p.m. Mountain

JW Marriott Tucson
3800 W Starr Pass Blvd
Tucson, AZ 85745

Call to Order

Mr. Kenneth W. DeFontes, Jr., Chair, called to order the duly noticed open meeting of the Board of Trustees (the Board) of the North American Electric Reliability Corporation (NERC or the Corporation) on February 16, 2023, at 9:30 a.m. Mountain, and a quorum was declared present.

Present at the meeting were:

Board Members

Kenneth W. DeFontes, Jr., Chair
George S. Hawkins, Vice Chair
Jane Allen
Robert G. Clarke
Larry Irving
Suzanne Keenan
Susan Kelly
Robin E. Manning
Jim Piro
James B. Robb, President and Chief Executive Officer
Kristine Schmidt
Colleen Sidford

NERC Staff

Tina Buzzard, Assistant Corporate Secretary
Manny Cancel, Senior Vice President and Chief Executive Officer of the E-ISAC
Howard Gugel, Vice President, Engineering and Standards
Kelly Hanson, Senior Vice President and Chief Administrative Officer
Stan Hoptroff, Vice President, Business Technology
Mark G. Lauby, Senior Vice President and Chief Engineer
Sônia Mendonça, Senior Vice President, General Counsel, and Corporate Secretary
Kimberly Mielcarek, Vice President, Communications
Lauren Perotti, Senior Counsel
Bryan Preston, Vice President, People and Culture
Andy Sharp, Vice President and Chief Financial Officer

NERC Antitrust Compliance Guidelines

Mr. DeFontes noted the public nature of the meeting and directed the participants’ attention to the NERC Antitrust Compliance Guidelines included in the advance meeting materials. He stated that any additional questions regarding these guidelines should be directed to Ms. Mendonça.

Introduction and Chair’s Remarks

Mr. DeFontes welcomed all of the attendees to the meeting and remarked on the engaged discussion at the Board Committee and Member Representatives Committee (MRC) meetings, as well as the first quarterly technical session. Mr. DeFontes welcomed new Trustee Kristine Schmidt to the Board. He also welcomed Ms. Patricia Hoffman, Principal Deputy Assistant Secretary for the Office of Electricity, U.S. Department of Energy, and Mr. David Morton, Chair, CAMPUT.

Consent Agenda

Upon motion duly made and seconded, with Ms. Schmidt abstaining, the Board approved the consent agenda as follows:

Minutes

The draft minutes for the December 14, 2022 and November 16, 2022 meetings were approved as presented to the Board at this meeting.

Committee Membership

Reliability and Security Technical Committee Membership

RESOLVED, that the Board hereby appoints the following individuals to the Reliability and Security Technical Committee (“RSTC”) as follows:

Sector Elected Members	
1. Investor-owned utility	Greg Stone (Duke Energy) – 2023-2025
2. State/municipal utility	Saul Rojas (NYPA) – 2023-2025
3. Cooperative utility	Marc Child (Great River Energy) – 2023-2025
4. Federal or provincial utility/Federal Power Marketing Administration	Edison Elizeh (Bonneville Power) – 2023-2025
5. Transmission dependent utility	John Stephens (City Utilities of Springfield) – 2023-2025
6. Merchant generator	Mark Spencer (LS Power) 2023-2025
7. Electricity Marketer	Seat converted to At-large – 2023-2025
8. Large end-use electricity customer	Seat converted to At-large – 2023-2025
9. Small end-use electricity customer	Darryl Lawrence (PA Office of Consumer Advocate) – 2023-2025
10. Independent system operator/regional transmission organization	Eric Miller (MISO) – 2023-2025
12. State Government	Christine Ericson (Illinois Commerce Commission) – 2023-2025
At-Large Members	
Ian Grant	Tennessee Valley Authority – 2023-2025 (converted sector 7 seat)
Marc-Antoine Roy	Hydro Quebec – 2023-2025 (converted Sector 8 seat)

William Allen	Exelon – 2023-2025
Thomas Burns	PacifiCorp – 2023-2025
David Jacobson	Manitoba Hydro – 2023-2025
Srinivas Kappagantula	Arevon Energy – 2023-2025
Todd Lucas	Southern Company -2023-2025
Brett Kruse	Calpine – 2023-2024

Reliability Issues Steering Committee Membership

RESOLVED, that the Board hereby appoints the following individuals to the Reliability Issues Steering Committee (“RISC”) as follows:

Member Type/Term	Name/Organization
Proposed Chair Term expiring January 31, 2025	Adrienne Collins, Vice Chair Southern Company
At-Large Member Term expiring January 31, 2025	Nelson Peeler Duke Energy
At-Large Member Term expiring January 31, 2025	Teresa Mogensen Xcel Energy
At-Large Member Term expiring January 31, 2025	Tom Galloway NATF
At-Large Member Term expiring January 31, 2025	Al Tamimi Sunflower Electric Power Corporation
At-Large Member Term expiring January 31, 2025	Lee Ragsdale NC Electric Membership Corporation
At-Large Member Term expiring January 31, 2025	Joe Sowell Georgia Transmission
At-Large Member Term expiring January 31, 2025	Daniel Mishra JEA
At-Large Member Term expiring January 31, 2025	Tim Kelley SMUD
At-Large Member Term expiring January 31, 2025	Roderick Robinson PG&E
At-Large Member Term expiring January 31, 2025	Chris Lincoln NB Power
At-Large Member Term expiring January 31, 2025	Ranjika Manamperi Ontario Power Generation
At-Large Member Term expiring January 31, 2025	Tim Swanson FortisBC
MRC Member Term expiring January 31, 2025	Sean Cavote PSEG

MRC Member Term expiring January 31, 2024 (fulfilling a retiring member's term)	Jennifer Flandermeyer Eergy
Compliance & Certification Committee Term expiring January 31, 2024	Silvia Parada-Mitchell NextEra Energy
Reliability and Security Technical Committee Term expiring January 31, 2024	Rich Hydzik Avista
Standards Committee Term expiring January 31, 2024	Amy Casuscelli Xcel Energy

Governance Documents Amendments

RESOLVED, that the Board hereby approves the revised CCC procedure document CCCPP-013-3, Procedure for Selection of Members to the NERC Compliance and Certification Committee, substantially in the form presented to the Board at this meeting.

Regular Agenda

Remarks by Mike Hummel, Salt River Project

Mr. DeFontes noted that Mr. Hummel of Salt River Project was unable to attend the meeting due to a last minute scheduling conflict.

Remarks by Patricia Hoffman, Principal Deputy Assistant Secretary for the Office of Electricity, DOE

Mr. DeFontes introduced Ms. Hoffman of DOE. Ms. Hoffman remarked on the DOE's focus on transmission issues, including efforts to optimize the existing system in addition to building new facilities. She also remarked on DOE's engagement with the states on resiliency matters, including extreme weather issues and associated impacts, and exploration of opportunities to leverage the work of the DOE national laboratories in climate modeling. Ms. Hoffman discussed DOE efforts to drive the deployment of new technologies to improve the system and streamline permitting processes. She concluded her remarks by noting the need for continued engagement to address new and emerging issues affecting the grid.

Remarks by David Morton, CAMPUT Representative to NERC

Mr. DeFontes introduced Mr. Morton of CAMPUT. Mr. Morton remarked on the ongoing collaboration between NERC and the Canadian regulators, including engagement between NERC and the Canadian regulators at the January 2023 Reliability Issues Steering Committee summit and briefings on NERC reliability assessments. He remarked on CAMPUT's efforts to address natural gas/electric interdependencies, including understanding the potential impacts of continuing electrification, and the need to continue engaging on these issues.

President's Report

Mr. Robb provided the president's report. He remarked on the engagement at the previous day's meetings and stakeholder dinner, congratulated Roy Thilly on his retirement, and noted the recent publication of NERC's 2022 annual report.

Mr. Robb remarked on feedback NERC has received from its stakeholders on its four focus areas of energy, security, agility, and sustainability. In the area of energy, he stressed the need to address the issues around inverter-based resources, noting that these issues were first identified in 2016, and to consider the impacts smaller resources can

have on reliability. Mr. Robb noted the continuing challenges of preparing the grid to operate reliably during extreme weather events. He also stressed the need to shift how industry plans for energy sufficiency and essential reliability services, recognizing that one no longer brings the other in light of the changing resource mix.

In the area of security, Mr. Robb stressed the need to address the increasing threats to the physical and cyber security of the grid, including finding cost-effective ways to mitigate exposures to assets not subject to the CIP Reliability Standards. In the area of agility, he remarked on the standards process changes out for comment and how these changes are intended to advance NERC's ability to address key reliability issues in a timely fashion. In the area of sustainability, Mr. Robb remarked on NERC's focus on organization and development plan efforts, and how these efforts will ensure that NERC can continue to play an important role in grid reliability now and in the future.

Mr. Robb then introduced Mr. Jason Blake, CEO of SERC, and co-chair of the ERO Executive Group. Mr. Blake remarked on Regional Entity efforts to address the continuing challenges from extreme weather and the growing penetration of inverter-based issues. He also discussed continuing progress in leveraging ERO Enterprise knowledge and expertise to optimize its reliability efforts.

Report on the February 14 and February 16, 2023 Closed Meetings

Mr. DeFontes reported that on February 14, 2023 and February 16, 2023 (as is its custom), the Board met in closed session with NERC management to review NERC management activities. On February 14, the Board discussed the 2024 business plan and budget process, received updates on the cold weather Reliability Standards and CRISP program, and discussed oversight matters. On February 16, the Board discussed the Reliability Standards items presented at this meeting, the Board's resolutions for this meeting, feedback on policy input and the MRC meeting, and additional discussion from the Committee meetings. The Board adjourned into executive sessions with the General Counsel and the CEO, and with the General Counsel separately, to discuss confidential matters. The Board also adjourned into executive session to welcome Ms. Schmidt to the Board.

Election and Appointment of Board Chair and Vice Chair, Board of Trustees Committee Assignments, and NERC Officers

Mr. DeFontes presented the recommendations for Board officers and committee assignments. Mr. Robb presented the proposed slate of NERC officers. After discussion, and upon motion duly made and seconded, the Board approved the following resolutions:

RESOLVED, that the Board hereby elects the following officers of the Corporation for 2023:

- Kenneth W. DeFontes, Jr., Chair
- George S. Hawkins, Vice Chair
- James B. Robb, President and Chief Executive Officer

FURTHER RESOLVED, that the Board, upon recommendation of the President, hereby appoints the following individuals as officers of the Corporation for 2023:

- Sonia Mendonca, Senior Vice President, General Counsel, and Corporate Secretary
- Manny Cancel, Senior Vice President and Chief Executive Officer of the E-ISAC
- Kelly Hanson, Senior Vice President and Chief Administrative Officer
- Mark G. Lauby, Senior Vice President and Chief Engineer
- Janet Sena, Senior Vice President, External Affairs

- Howard Gugel, Vice President, Engineering and Standards
- Stanley Hoptroff, Vice President, Business Technology
- Kimberly Mielcarek, Vice President, Communications
- Bryan Preston, Vice President, People and Culture
- Andy Sharp, Vice President and Chief Financial Officer
- Mechelle Thomas, Vice President, Compliance

FURTHER RESOLVED, that the Board, upon recommendation of the Chair in consultation with the CGHRC, hereby approves the following 2023 Board Committee Assignments, as presented to the Board at this meeting.

Chair: Kenneth W. DeFontes, Jr.

Vice Chair: George S. Hawkins

Immediate Past Chair: N/A

Corporate Governance and Human Resources

Chair: Suzanne Keenan

Robert G. Clarke
George S. Hawkins
Larry Irving
Jane Allen
Susan Kelly

Compliance Committee

Chair: Robin E. Manning

Larry Irving
George S. Hawkins
Susan Kelly
Suzanne Keenan

Finance and Audit

Chair: Colleen Sidford

Robert G. Clarke
George S. Hawkins
Susan Kelly
Kristine Schmidt
Jim Piro

Enterprise-wide Risk

Chair: Jim Piro

Robert G. Clarke
Rob Manning
Colleen Sidford
Kristine Schmidt
Jane Allen

Technology and Security

Chair: Jane Allen

Larry Irving
Suzanne Keenan
Robin E. Manning
Jim Piro
Colleen Sidford

Nominating Committee

Chair: Robert G. Clarke

Jane Allen
Suzanne Keenan
Colleen Sidford
Jim Piro
Kristine Schmidt

MRC Members

Jennifer Flandermeyer, MRC Chair
John Haarlow, MRC Vice Chair
Additional MRC Members to be determined

Related Assignments

- **ESCC Observer:** Kenneth W. DeFontes, Jr.
- **MEC Liaison:** Jane Allen
- **Standards Committee Observer:** Susan Kelly
- **Reliability and Security Technical Committee Observer:** Rob Manning
- **International Liaison:** Colleen Sidford
- **Ex Officio all committees:** Kenneth W. DeFontes

Board Committee Reports

Corporate Governance and Human Resources

Ms. Keenan, Committee Chair, reported on recent Committee meetings. At the February 14, 2023 closed meeting, the Committee reviewed NERC's employee total rewards package, including NERC's significant benefit and retirement plans, and discussed revisions to the Board Committee and Board of Trustees annual evaluation questionnaires. The Committee also met in executive session with the CEO and the Vice President, People and Culture to discuss HR matters, and without staff to discuss other confidential matters. At the February 15, 2023 open meeting, the Committee reviewed its mandate, approved the revised Board Committee and Board annual evaluation questionnaires, reviewed the NERC Governance Guidelines, received the annual conflict of interest report, and received an update on NERC's people and culture initiatives.

Compliance

Mr. Manning, Committee Chair, reported on recent Committee meetings. At the February 14, 2023 closed meeting, the Committee received a presentation from a registered entity on their compliance posture and received updates on NERC's inverter-based resources strategy and CMEP/Organization Registration and Certification Program (ORCP) oversight. The Committee also adjourned into executive session to discuss confidential matters. At the February 15, 2023 open meeting, the Committee received an update on the 2023 CMEP and ORCP Annual Report and reviewed its mandate.

Finance and Audit

Mr. Piro, Committee Chair, reported on recent meetings of the Committee. At the February 14, 2023 closed meeting, the Committee received updates on the 2022 year-end audit plan and activities and 2023 audit plan and received an update on investment fund performance. The Committee also reviewed and recommended for Board adoption certain portions of the NERC Travel and Expense Reimbursement Policy and Matrix, with such adoption to take place by written consent. The Committee then adjourned into executive session.

Mr. Piro reported that, at its February 15, 2023 open meeting, the Committee reviewed the current Investment Policy and reviewed its mandate, with certain revisions to be considered through written consent. The Committee also reviewed and recommended for Board acceptance the 2022 year-end unaudited summary of results. Upon motion duly made and seconded, the Board approved the following resolution:

RESOLVED, that the Board, upon recommendation of the FAC, hereby accepts the 2022 NERC, Combined ERO Enterprise, and Regional Entity Unaudited Statement of Activities, as presented to the Board at this meeting.

Enterprise-wide Risk

Ms. Sidford, Committee Chair, reported on the Committee's closed meeting on February 14, 2023. At its meeting, the Committee received updates from Mr. Scott Tomaszefsky, Chair of the Compliance and Certification Committee (CCC), on CCC activities, and from Mr. Jason Blake, President and CEO of SERC, regarding Regional Entity activities. The Committee also reviewed Internal Audit activity, received an update on the 2023 enterprise risk management

framework, and reviewed the Committee mandate. The Committee concluded in executive session with Mr. Sharp to discuss insurance matters.

Technology and Security

Ms. Allen, Committee Chair, reported on the February 15, 2023 open meeting of the Committee. At this meeting, the Committee received updates on E-ISAC operations and ERO Enterprise Business Technology, including Align and the Secure Evidence Locker, and reviewed its mandate.

Nominating

Mr. Clarke, Committee Chair, reported that the Committee's 2022 work completed at the MRC meeting the day prior with the election of Suzanne Keenan, Jim Piro, and Kristine Schmidt to the Board. He noted that 2023 work is underway.

Report by Susan Kelly on Standards and RSTC Quarterly Activities

Ms. Kelly, Liaison to the Standards Committee, reported on standards activities and actions taken at recent meetings, including the Standards Committee providing authorization to post the proposed standards process changes for comment and ballot, examine project prioritization, and receive updates provided by drafting team leadership regarding project status. She also reported on efforts to improve alignment between activities at the RSTC and the Standards Committee.

Semi-Annual Reports to the Board

Personnel Certification Governance Committee

Mr. Cory Danson, Committee Chair, provided an update on the activities of the Committee. Mr. Danson then presented the proposed 2023 Committee work plan for the Board's approval. Upon motion duly made and seconded, the Board approved the following resolution:

RESOLVED, that the Board hereby approves the Personnel Certification Governance Committee 2023 Work Plan, substantially in the form presented to the Board at this meeting.

Standards Committee

Ms. Amy Casuscelli, Committee Chair, provided an update on the activities of the Committee, referencing the materials provided in the advance agenda package. She highlighted Committee action to address the last of the Standards Efficiency Review recommendations, reconsider how the standards grading process is conducted, and implement the recommendations from the Standards Process Stakeholder Engagement Group. Ms. Casuscelli then presented the proposed 2023-2025 Committee strategic work plan for the Board's approval. Upon motion duly made and seconded, the Board approved the following resolution:

RESOLVED, that the Board hereby approves the Standards Committee 2023-2025 Strategic Work Plan, substantially in the form presented to the Board at this meeting.

Compliance and Certification Committee

Mr. Scott Tomashefsky, Committee Chair, provided an update on the activities of the Committee, referencing the materials provided in the advance agenda package. He highlighted the role of collaboration in the proposed 2023 work plan, discussed efforts to support the implementation of the Standards Process Stakeholder Engagement Group recommendations, and reported that work on the 2022 stakeholder perceptions report is underway. Mr.

Tomashefsky then presented the proposed 2023 Committee work plan for the Board's approval. Upon motion duly made and seconded, the Board approved the following resolution:

RESOLVED, that the Board hereby approves the CCC 2023 Work Plan, substantially in the form presented to the Board at this meeting.

Reliability and Security Technical Committee

Mr. Greg Ford, Committee Chair, highlighted the Committee's work to address stakeholder feedback, including improving stakeholder perceptions of the Committee's transparency, determining the appropriate balance of in-person and remote participation going forward, and refining its organizational strategy so it can best manage the high volume of work requiring its attention. Mr. Ford then presented the proposed 2023-2025 Committee strategic work plan for the Board's approval. Upon motion duly made and seconded, the Board approved the following resolution:

RESOLVED, that the Board hereby approves the RSTC 2023-2025 Strategic Plan, substantially in the form presented to the Board at this meeting.

North American Energy Standards Board

Mr. Michael Desselle, Chair of the NAESB Board of Directors, provided an update on NAESB activities in areas of mutual interest, particularly natural gas-electric coordination.

North American Transmission Forum

Mr. Tom Galloway, Forum Chair, provided an update on NATF activities. He highlighted NATF work on inverter-based resources and efforts to advance resiliency, including creating a resiliency-risk construct. He noted an upcoming NERC-NATF-EPRI summit on climate impacts. He also remarked on NATF efforts to address supply chain risk mitigation and advance initiatives regarding facility ratings.

North American Generation Forum

Mr. DeFontes referred to the materials included in the advance agenda package.

Standards Quarterly Report and Actions

Project 2021-04 Modifications to PRC-002 (Glencoe SAR)

Mr. Gugel presented proposed Reliability Standard PRC-002-4, highlighting the clarifying nature of the changes and that a second phase of work to address inverter-based resource issues remains ongoing. After discussion, and upon motion duly made and seconded, the Board approved the following resolutions:

RESOLVED, that the Board hereby adopts the proposed Reliability Standard PRC-002-4, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board hereby approves the Violation Risk Factors and Violation Severity Levels for the proposed Reliability Standard, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board hereby approves the associated implementation plan for the above-listed standard, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board hereby approves the proposed retirement of Reliability Standard PRC-002-3, as presented to the Board at this meeting.

FURTHER RESOLVED, that NERC management is hereby authorized to make the appropriate filings with ERO governmental authorities and take such further actions and make such further filings as are necessary and appropriate to effectuate the intent of the foregoing resolutions.

Project 2021-04 Modifications to PRC-023

Mr. Gugel presented proposed Reliability Standard PRC-023-6, highlighting that the proposed changes are intended to eliminate confusion surrounding the applicability of the standard to out-of-step, or power swing blocking, elements. After discussion, and upon motion duly made and seconded, the Board approved the following resolutions:

RESOLVED, that the Board hereby adopts the proposed Reliability Standard PRC-023-6, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board hereby approves the Violation Risk Factors and Violation Severity Levels for the proposed Reliability Standard, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board hereby approves the associated implementation plan for the above-listed standard, as presented to the Board at this meeting.

FURTHER RESOLVED, that the Board hereby approves the proposed retirement of Reliability Standard PRC-023-5, as presented to the Board at this meeting.

FURTHER RESOLVED, that NERC management is hereby authorized to make the appropriate filings with ERO governmental authorities and take such further actions and make such further filings as are necessary and appropriate to effectuate the intent of the foregoing resolutions.

Cold Weather Standards Status

Mr. Gugel provided an update on the status of standards development to address the second phase recommendations for Reliability Standards improvements from the FERC and ERO Enterprise Joint Inquiry Report into the causes of the February 2021 cold weather event. He reported that FERC issued an order at its February 16, 2022 open meeting approving the standards with directives for further modifications.

Standard Process Improvement Opportunities

Mr. Gugel provided an update on activities to implement the recommendations of the Standards Process Stakeholder Engagement Group, as directed by the Board at its November 2022 meeting. He reported that the proposed revisions to the NERC Rules of Procedure and Standard Processes Manual are posted for comment through March 6, 2023, and the standing committees are discussing how to best implement the recommendations directed at their activities.

Other Matters and Reports

Input Letter and Member Representatives Committee Meeting

Mr. DeFontes referred to the discussion of Board-requested input items at the February 15, 2023 Member Representatives Committee meeting. He invited Ms. Jennifer Flandermeyer, Committee chair, to provide remarks. Ms. Flandermeyer indicated the Committee's support for ensuring the success of NERC and the standing committees in achieving NERC's reliability mission and remarked on the improvements already underway.

Year-End Review of the Achievements of the 2022 ERO Enterprise Work Plan Priorities

Ms. Hanson provided an update on key accomplishments under the 2022 ERO Enterprise Work Plan Priorities, as well as a summary of year-end status. She highlighted advances in addressing critical reliability and security risks, being a trusted, independent source for reliability information, expanding outreach and partnerships, strengthening the E-ISAC, executing a strong ERO Enterprise CMEP, collaborating on critical efforts across the ERO Enterprise, and investments in NERC's people, culture, and processes. The Board engaged in discussion of the material presented.

Joint RISC/RSTC Presentation: Evaluation and Prioritization of Emerging Risks

Ms. Adrienne Collins, RISC Vice Chair, provided a summary of the 2023 Reliability Leadership Summit, highlighting the need for increased collaboration across industry, vendors, and regulators to address the challenges facing the grid. She reviewed the timeline for the development of the 2023 Risk Report and encouraged attendees to provide feedback when the draft is posted for comment.

Mr. Ford discussed the current organization and technical focus of the RSTC, including subcommittees set up to help the RSTC achieve its objectives. He then provided an overview of the new strategic plan for 2023-2024, discussing how all future projects will be linked to a RISC priority, and noting that the RSTC will be working on efforts to improve the form Standard Authorization Requests that are submitted to the Standards Committee. Mr. Ford also provided an overview of how RSTC will implement NERC's framework to identify, prioritize, and addressing known and emerging reliability and security risks, focusing on the first three steps of the framework: (1) risk identification and validation; (2) risk prioritization; and (3) determination of risk remediation/mitigation. He concluded by noting the Committee's focus on strengthening the process. Mr. DeFontes remarked on the thoughtfulness of this work and encouraged attendees to review this information with others in their companies.

Request to Use Expedited Procedures for Requesting Time-Sensitive Data or Information under Section 1606 of the NERC Rules of Procedure – Internal Network Security Monitoring Study Directive

Ms. Perotti presented NERC staff's request to use the expedited comment and review procedures available in Section 1606 of the NERC Rules of Procedure for a planned request for data or information to address a FERC directive issued in Order No. 887. She provided background information regarding the order and explained that NERC must use expedited comment and review procedures in order to collect the necessary information and submit a report to FERC by the January 2024 deadline. After discussion, and upon motion duly made and seconded, the Board approved the following resolutions:

WHEREAS, on January 19, 2023, the U.S. Federal Energy Regulatory Commission ("FERC") issued Order No. 887 directing NERC to develop Reliability Standards requirements to require internal network security monitoring for all high impact Bulk Electric System (BES) Cyber Systems and medium impact BES Cyber Systems with External Routable Connectivity;

WHEREAS, FERC also directed NERC in Order No. 887 to conduct a study of the risks stemming from a lack of internal network security monitoring and the feasibility of requiring it for other BES Cyber Systems not subject to the directed standards that includes certain categories of entity data, and to submit this study by January 18, 2024;

WHEREAS, NERC intends to use its authority under Section 1600 of the NERC Rules of Procedure to collect the data needed to perform the directed study;

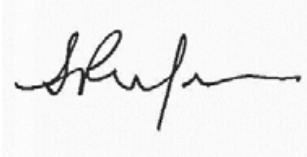
WHEREAS, in order to comply with this directive and submit the directed study by January 18, 2024, NERC must obtain the necessary data within a time period that does not permit adherence to the usual time periods for review and comment provided in Section 1602 of the Rules of Procedure for draft requests for data or information;

NOW, THEREFORE, BE IT RESOLVED, that NERC management is hereby authorized to use the expedited procedures for requesting time-sensitive data or information as provided in Section 1606 of the Rules of Procedure.

Other Matters and Adjournment

There being no further business, and upon motion duly made and seconded, the meeting was adjourned.

Submitted by,

A handwritten signature in black ink, appearing to read 'Sônia Mendonça', is written over a light gray rectangular background.

Sônia Mendonça
Corporate Secretary

Compliance and Certification Committee Membership

Action

Approve

Background

The CCC recommends that the Board of Trustees approve the following membership. Appointments to fulfill two terms vacated by member resignations for three-year terms as provided below.

- Scott Brame, North Carolina Electric Membership Corporation: Sector 3 from January 1, 2022 – December 31, 2024
- Tino Zaragoza, Imperial Irrigation District: Member At Large from January 1, 2023 – December 31, 2025

Texas Reliability Entity Regional Standards Development Process

Action

Approve Texas Reliability Entity (Texas RE) Regional Standards Development Process (RSDP) and authorize NERC staff to file with the applicable regulatory authorities.

- Texas RE Regional Standards Development Process
[\[Texas RE Regional Standards Development Process-Clean\]](#)
[\[Texas RE Regional Standards Development Process -Redline\]](#)

Background

On February 8, 2023, Texas RE Board of Directors approved revisions to the Texas RE RSDP. The revisions include the following:

- Revisions to promote consistency with other Texas RE materials and align with the NERC Standard Processes Manual;
- Revisions to clarify certain provisions;
- Revisions to enhance the efficiency of the document; and
- Revisions to promote stakeholder participation and enhance the efficiency of the process by providing enhanced flexibility.

A summary of the revisions and associated rationale is included in the [Mapping Document](#).

Summary

As required by the Section 311 of the NERC Rules of Procedure, NERC staff reviewed the revised Texas RE RSDP and concluded the document met all of the evaluation criteria. The revised Texas RE RSDP was posted on the NERC website for a 45-day industry stakeholder comment period from March 8 – April 21, 2023. Any adverse comments, along with any Texas RE responses, will be reviewed at the NERC Board of Trustees meeting.

Additional Information

A link to the project history and files is included for reference:

[Regional Standards Project SAR-012 Revisions to the Texas RE Standards Development Process](#)

[NERC – Regional Standards in Development](#)

Standards Process Improvement Opportunities

Action

Update

Background

Since 2007, mandatory Reliability Standards have played an integral role in addressing new and emerging risks to the reliability and security of the grid. Given the pace of change taking place on the bulk power system, NERC must continually improve its standard development processes to ensure that they are nimble and agile enough to keep pace with the speed at which novel risks are emerging. With the importance of addressing the challenges of the transforming grid in mind, the NERC Board of Trustees (Board) directed NERC staff at its February 10, 2022, meeting, to examine the body of rules regarding Reliability Standards development and, considering the feedback of stakeholders, recommend such changes that would improve NERC's ability to address urgent reliability needs with appropriate agility, while also maintaining reasonable notice and opportunity for public comment, due process, openness, and balance of interests.

NERC staff developed preliminary recommendations and convened a Standards Process Stakeholder Engagement Group (SPSEG) to provide feedback and develop consensus recommendations for improving agility of the process while maintaining the key role of stakeholders in producing consensus standards. This group included representatives from the Board, NERC staff, Member Representatives Committee, Standards Committee (SC), Compliance and Certification Committee, Reliability and Security Technical Committee, and Reliability Issues Steering Committee with representation from U.S. and Canadian entities.

The SPSEG developed [recommendations](#) to propose to the Board that fall into the following categories: [revisions to Section 300 of the NERC Rules of Procedure](#), [revisions to the Standard Processes Manual](#), recommendations for standing committees, and a review of the Registered Ballot Body criteria. Stakeholder participation through an open and transparent process is key to the success of the ERO model, and the recommendations are intended to enhance, and not reduce or replace, the role of stakeholder feedback in NERC's standard development processes.

NERC posted the proposed changes to the Rules of Procedure for a 45-day public comment period from January 18, 2023 through March 6, 2023. Concurrently, NERC posted the proposed changes to the Standard Processes Manual for 45-day comment and ballot period. The first ballot on the proposed Standard Processes Manual changes did not achieve the required ballot body approval. On March 22, 2023, the SC provided authorization to continue this project and pursue additional ballot(s) after making changes based on comments received. A second 45-day formal comment period and additional ballot is presently underway. On the same day, the SC approved a work plan for implementing the SPSEG recommendations regarding the administration of the standards development process.

NERC staff will provide an update on these and other activities implementing the SPSEG recommendations.

Additional Information

[Standards Process Stakeholder Engagement Group page](#)

Inverter-Based Resources Work Plan

Action

Update

Background

The rapid integration of bulk power system (BPS) connected inverter-based resources (IBRs) driven predominantly by decarbonization targets is the most significant driver of grid transformation across North America. These resources present unique operational benefits; however, they can also present significant risks to the BPS if industry fails to adapt the way the grid is planned, designed, and operated. In particular, updating the NERC Registration process, revising Reliability Standards, ensuring adequate interconnection requirements and processes, using accurate models to conduct reliability studies, and ensuring adequate operational visibility and flexibility for these resources will be critical moving forward.

The speed of change continues to challenge grid planners, operators, protection engineers, and many other facets of the electricity sector. For instance, the *2022 NERC Long-Term Reliability Assessment*¹ projects a rapid growth of IBRs—mostly solar photovoltaic (PV), wind, battery energy storage systems, and hybrid plants—representing over 70% of new generation in development connecting to the BPS. Tier 1 and Tier 2 resource projections exceed over 250 GW over the next 10 years. Over 88+ GW of fossil-fueled, synchronous generation is slated for retirement over the same assessment period.

Reliable operation of the BPS will require maximizing the operational capabilities from inverter-based resources, addressing known and emerging reliability issues presented by the growing levels of these resources, and that these resources support and provide essential reliability services during both normal operation and system disturbances.

On November 17, 2022, FERC issued an order directing NERC to submit a work plan within 90 days describing, in detail, how NERC plans to identify and register owners and operators of IBRs that are connected to the bulk-power system (BPS), but are not currently required to register with NERC under the Bulk Electric System (BES) definition that have an aggregate, material impact on the reliable operation of the BPS. On the same day, FERC issued a Notice of Proposed Rulemaking proposing to direct NERC to develop new and revised Reliability Standards to address IBR issues, including: (i) data sharing; (ii) modeling and model validation; (iii) planning and operational studies, and (iv) performance requirements.

IBR Registration Work Plan

NERC submitted² its IBR registration work plan on February 15, 2023, as amended³ March 13, 2023.

¹ http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_LTRA_2022.pdf

² https://www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/IBR%20Registration%20Work%20Plan_final.pdf

³ https://www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/Amendment%20to%20Work%20Plan%20Filing%20RD22-4_final.pdf

In the work plan, NERC proposed to coordinate with Regional Entities and stakeholders to develop a new registered entity function within the NERC Rules of Procedure (ROP) for unregistered IBRs. This new class of registered entity would be designed to ensure that owners and operators of unregistered IBRs are included in the NERC Compliance Registry. The new function would address both ownership and operational characteristics. NERC plans to work with stakeholders innovatively to ensure that material unregistered IBRs with aggregate nameplate capacity greater than or equal to 20 MVA are subject to appropriate NERC Reliability Standards.

IBR Standards Development Projects

In addition to the plan to register owners and operators of IBRs, NERC also has several standard development projects underway to address reliability issues noted in past event reports. This includes, for example, the projects pertaining to generator ride-through, model validation, and electromagnetic transient studies. The ERO Enterprise comments in response to FERC's IBR Standards Notice of Proposed Rulemaking further describes NERC's activities to address IBR issues. Two groups that report to the Reliability and Security Technical Committee (RSTC), the Inverter-Based Resource Performance Subcommittee (IRPS) and the System Planning Impacts from DER Working Group (SPIDERWG), are also in the process of developing reliability guidelines and Standard Authorization Requests (SARs) to further address reliability issues noted in past event reports.

NERC staff will provide an overview of these activities.

Cold Weather Standards Status

Action

Update

Background

From February 8 - 20, 2021, extreme cold weather and precipitation affected the south central United States. During this time, large numbers of generating units experienced outages, derates, or failures to start, resulting in energy and transmission emergencies and load shed across the Electric Reliability Council of Texas (ERCOT), Southwest Power Pool (SPP), and Midcontinent Independent System Operator (MISO) footprints. System conditions during this event, referred to as the February 2021 Event, resulted in the largest controlled firm load shed event in U.S. history. The system experienced the third largest in quantity of outaged megawatts (MW) of load after the August 2003 northeast blackout and the August 1996 west coast blackout.

In response to the February 2021 Event, a joint inquiry team consisting of staff from the Federal Energy Regulatory Commission (FERC), NERC, and the six Regional Entities, investigated the causes of the event and made recommendations to prevent future reoccurrence. In its November 2021 [report](#), the joint inquiry team made 10 recommendations for NERC Reliability Standards revisions to address cold weather preparedness and operations, along with recommended two-phase timeline for the completion of standards. In November 2021, the NERC Board of Trustees (Board) approved a resolution directing the development of Reliability Standards in two phases to address the recommendations of the Joint Inquiry team, in accordance with the Joint Inquiry team's recommended timelines. Project 2021-07 was initiated to address the Joint Inquiry team recommendations.

In October of 2022, the Board adopted EOP-011-3 and EOP-012-1 to mark the conclusion of phase 1 of work under Project 2021-07. On February 16, 2023, FERC issued an order approving EOP-011-3 and EOP-012-1, and directed NERC to modify EOP-012-1 to address the following:

1. **Applicability:** The Commission directed NERC to revise the applicability of the standard to ensure that it captures all BES generation resources needed for reliable operation and excludes only those generation resources not relied upon during freezing conditions, consistent with the drafting team's stated intent. The Commission deferred its decision on whether to approve the proposed effective date of EOP-011-3 until NERC submits the revised applicability section of EOP-012 to ensure all entities currently required to identify cold weather operating parameters in cold weather preparedness plans under the EOP-011-2 standard would remain covered under the revised EOP-012 standard.
2. **Generator Constraints to Implementing Winterization Requirements** (Requirements R1, R2, and R7): The Commission directed NERC to develop modifications to Requirements R1 and R7 to address concerns related to generator-defined declarations of technical, commercial, or operational constraints that preclude a generator owner from implementing the appropriate freeze protection measures. Specifically, the Commission directed NERC to include auditable criteria on permissible constraints and to identify the

appropriate entity that would receive the generator owners' constraint declarations under EOP-012-1 Requirements R1 and R7.

3. **Generator Capability Requirements** (Requirements R1 and R2): The Commission directed NERC to modify EOP-012-1 Requirement R1 to ensure that generators that are technically incapable of operating for 12 continuous hours (e.g., solar facilities during winter months with less than 12 hours of sunlight) are not excluded from complying with the standard. The Commission also directed NERC to modify the one-hour continuous operations requirement of Reliability Standard EOP-012-1 Requirement R2 to better align with the stated purpose of the Reliability Standard EOP-012-1.
4. **Corrective Action Plan deadlines:** For any requirement requiring the development of a corrective action plan to address capability or cold weather performance issues, the Commission directed NERC to include a deadline or maximum period for the completion of corrective action plan measures.
5. **Implementation Plan:** The Commission directed NERC to require a shorter implementation period than five years post approval, as well as a staggered implementation for unit(s) across a generator owner's fleet (e.g., 30% compliant by Year X, 60% compliant by Year Y, 100% compliant by Year Z).

The Commission directed NERC to submit revisions to EOP-012-1 by February 15, 2024 (within 12 months of issuance of the order). Additionally, the Commission directed NERC to submit a work plan describing how it will report on entity implementation of the EOP-012 standard.

Work is underway to complete the development of Reliability Standards to address the remaining recommendations and the directives mentioned. NERC staff will provide an update on ongoing activities addressing standard drafting activities.

Additional Information

A link to the project history and files is included here for reference:

[\[Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination\]](#)

Level 3 Alert Essential Actions to Industry Cold Weather Preparations for Extreme Weather Events III

Action

Approve

Background

Several notable events since 2011 have demonstrated the substantial impacts that extreme cold weather conditions can have on the reliability of the bulk power system (BPS). The November 2021 FERC/NERC joint inquiry report¹ into the causes of the February 2021 Winter Storm Uri cold weather event found that the February 2021 event, like the cold weather reliability events before it, had two main causes: first, generating units, unprepared for cold weather, failed in large numbers. Second, declines in natural gas production led to supply issues, which were exacerbated by the grid's increasing reliance on natural gas fired generation. When generators fail to take adequate measures to prepare for cold weather and are forced offline during high demand conditions, System Operators may need to shed firm customer load to prevent uncontrolled load shedding and cascading outages. Past events have shown that such load shed may result in major disruptions and have very real human consequences.

To date, NERC has developed two sets of cold weather Reliability Standards to advance reliability in cold weather conditions, as referenced in the attached alert. Reliability Standard EOP-012-1, developed to address the first phase Winter Storm Uri report recommendations, will become effective in October 2024. NERC continues work to enhance the standards and address the remaining Winter Storm Uri report recommendations.

Additionally, NERC has issued cold weather alerts under Section 810 of the NERC Rules of Procedure (ROP)² providing recommended actions for industry to take in advance of past winter seasons.

Given the continuing reliability need, the ERO Enterprise has determined the highest level NERC Alert is required for the 2023–2024 winter season, a Level 3 Alert Essential Actions to Industry. This would be the first level 3 alert issued by NERC. Under the ROP Board approval is required prior to issuance of a level 3 alert Essential Actions to Industry.

Summary

This level 3 alert is being issued to target a critical risk, cold weather preparations for extreme weather events to reliability, pending implementation of revised Reliability Standards. The level 3 Alert is intended to increase the Reliability Coordinators' (RC), Balancing Authorities' (BA), Transmission Operators' (TOP), and Generator Owners' (GO) readiness, enhanced plans for, and progress toward, mitigating risk for winter 2023–2024 and beyond. In developing the proposed Level 3 Alert, NERC provided Regional Entities, FERC, and other applicable governmental authorities the opportunity to provide comments.

¹ Winter Storm Uri: <https://www.ferc.gov/news-events/news/final-report-february-2021-freeze-undercores-winterization-recommendations>

² <https://www.nerc.com/AboutNERC/Pages/Rules-of-Procedure.aspx>

Essential Actions

The Level 3 Alert consists of eight Essential Actions, as follows:

1. Each GO should calculate the Extreme Cold Weather Temperature (ECWT)³ for each plant location prior to the next winter season.
2. Each GO should, pursuant to EOP-011-2 Requirement R7, identify in the cold weather preparedness plan, the Generator Cold Weather Critical Components and freeze protection measures implemented on those components prior to the next winter season.
3. Each GO should identify which units are capable of operating at the ECWT as currently built, and which units require additional freeze protection measures to operate at that temperature.
4. Each GO should identify which units experienced a Generator Cold Weather Reliability Event in the 2022–2023 winter season.
5. Each TOP should update their operating plan(s) prior to the next winter season, to include provisions to minimize the overlap of circuits that are designated for manual load shed and circuits that are utilized for underfrequency load shed (UFLS) or undervoltage load shed (UVLS).
6. Each BA should update their operating plan(s) prior to the 2023–2024 winter season, to include provisions for TOPs to implement operator controlled manual load shed; and manage generating resources in its BA Area.
7. Each GO should provide its RC, BA, and TOP the ECWT for its location prior to the next winter season and whether Generator Cold Weather Critical Component freeze protection measures will not be implemented on components prior to the next winter season.
8. Each GO should share their responses with their respective BAs and TOPs to allow for updates to any operating plans before the next winter seasons.

The schedule and timeline is as follows:

- Publishing date: May 15, 2023
- Distribution: BAs, GOs, and TOPs
- Response: Reporting required by Midnight Eastern on October 6, 2023
- FERC Report: Due November 3, 2023
- FAQ Document: NERC will publish a FAQ document to address some of the common concerns heard during development of the alert and to provide more clarity of the level 3 alert Essential Actions and questions.

After the responses are received, NERC will analyze the results and share the data with FERC in accordance with the ROP. NERC will coordinate with the regions on outreach and follow up with the registered entities that responded to the alert. This follow up will include understanding what actions they are taking to complete Essential Actions that were not completed, or are in the process of being completed.

NERC Management is seeking Board approval to issue this Level 3 Alert Essential Actions to Industry Cold Weather Preparations for Extreme Weather Events III.

³ [Extreme Cold Weather Preparedness: Technical Rationale and Justification for EOP-012-1](#)

ECWT is defined as 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.

DRAFT Essential Actions to Industry

Cold Weather Preparations for Extreme Weather Events III

Initial Distribution: May 15, 2023

NERC is issuing this Level 3 Alert: Essential Actions for Cold Weather Preparations for Extreme Weather Events to increase the Reliability Coordinators' (RC), Balancing Authorities' (BA), Transmission Operators' (TOP), and Generator Owners' (GO) readiness and enhance plans for, and progress toward, mitigating risk for the upcoming winter and beyond.

As the November 2021 FERC/NERC Joint Inquiry Report¹ into the Causes of the February 2021 Cold Weather Event (Winter Storm Uri) found, the bulk power system (BPS) cannot operate reliably unless generators and System Operators are prepared for cold weather. When cold weather events such as Winter Storm Uri occur, System Operators may need to shed firm customer load to prevent uncontrolled load shedding and cascading outages which may not only result in major disruption but also have very real human consequences.

Several extreme winter weather events have occurred in recent years, causing major interruptions to resources, transmission paths, and ultimately, end-use customers including:

- (i) The January 17, 2018² South Central United States Cold Weather Event;**
- (ii) The February 2021 cold weather event affecting Texas and the South-Central United States³; and**
- (iii) The December 2022 cold weather event Winter Storm Elliott⁴, that impacted parts of the Eastern Interconnection, where several RCs declared Emergency Energy Alerts (EEA3) and implemented firm load shed to help mitigate the loss of generation due to forced outages, higher than expected load and forecasting errors.**

NERC developed the Cold Weather Reliability Standards, EOP-011-2, TOP-003-5, and IRO-010-4, which became effective on April 1, 2023. NERC also issued the following alerts:

¹ Winter Storm Uri: <https://www.ferc.gov/news-events/news/final-report-february-2021-freeze-underscores-winterization-recommendations>

² *The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018* (nerc.com)

³ *Overview of Winter Storm Elliott December 23, Maximum Generation Event* (misoenergy.org)

⁴ *Item-Ox---Winter-Storm-Elliott-Overview* (pjm.com)

- (i) ***2021 Cold Weather Preparations for Extreme Weather Events alert on August 18, 2021; and***
- (ii) ***2022 Cold Weather Preparations for Extreme Weather Events II alert issued on September 12, 2022.***

In addition, the Federal Energy Regulatory Commission (FERC) recently approved the revised and new Cold Weather Reliability Standards, EOP-011-3 and EOP-012-1.^{5,6}

Additional information can be found at:

- [Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination](#)

[Why am I receiving this? >>](#)

[About NERC Alerts >>](#)

Status:

**Acknowledgement Required by Midnight Eastern on May 22, 2023
Reporting Required by Midnight Eastern on October 6, 2023**



PUBLIC: No Restrictions

[More on handling >>](#)

Instructions:

Essential Actions are specific actions that NERC has determined to be essential for certain segments of owners, operators, or users of the BPS to undertake to ensure the Reliable Operation of the BPS. Pursuant to Rule 810 of NERC’s Rules of Procedure (ROP),⁷ NERC registered entities shall (1) acknowledge receipt of these Essential Actions within the NERC Alert System, and (2) report to NERC on the status of their activities in relation to these Essential Actions (as provided below). For entities in the United States, NERC will aggregate the responses and provide an anonymized report to FERC.

This Level 3 NERC alert is not the same as a Reliability Standard. Your organization will not be subject to penalties under Section 215 of the Federal Power Act for failure to implement the Essential Actions. Further issuance of these Essential Actions does not alter the requirements of any approved Reliability Standard, nor would it excuse the failure to follow the practices discussed in these Essential Actions if such failure constitutes a violation of a Reliability Standard. Registered entities must continue to comply with applicable Reliability Standards.

⁵ [Petition Of The North American Electric Reliability Corporation For Approval Of Proposed Reliability Standards EOP-011-3 And EOP-012-1 And Request For Expedited Action](#)

⁶ [Order Approving Extreme Cold weather Reliability Standards](#)

⁷ [NERC Rules of Procedure](#)

Distribution: **Initial Distribution:** Balancing Authority (BA), Generator Owner (GO), Transmission Operator (TOP)

[Who else will get this alert? >>](#)

Primary Interest Groups:

Generation Engineering, Generation Operations, System Operations – Transmission Engineering, System Operators, Transmission Planning

Essential Actions:

Identifies actions deemed to be essential to BPS reliability and requires NERC Board of Trustees' approval prior to issuance. Like Recommendations, Essential Actions also require recipients to respond as defined in this alert.

These Essential Actions to Industry, which is a Level 3 NERC alert, do the following:

- Requires Registered Entities to acknowledge receipt of these Essential Actions within the NERC Alert System;
- Requires Registered Entities to respond to the questions; and
- Urges Registered Entities to take the Essential Actions below

To the extent that Canadian jurisdictions have implemented laws or requirements that vary from Section 810 of the ROP, NERC requests that entities in such jurisdictions voluntarily participate in acknowledgment and reporting pursuant to this alert.

For Essential Actions #3 and #4 which are applicable to GOs, they may exempt the following Bulk Electric System (BES) generating units:

- BES generating units that do not:
 - Operate in December – February (e.g., summer peaking units); or
 - Experience freezing conditions as determined by calculating the Extreme Cold Weather Temperature (ECWT) for the location

Essential Action #1: Each GO should calculate⁸ the ECWT for each plant location. ECWT⁹ is defined as 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. This number should be included in the cold weather preparedness plan prepared pursuant to EOP-011-2 Requirement R7.¹⁰

⁸ [Calculating Extreme Cold Weather Temperature](#) (nerc.com)

⁹ [Extreme Cold Weather Preparedness: Technical Rationale and Justification for EOP-012-1](#) (nerc.com)

¹⁰ This will be required in future versions of EOP-012

Essential Action #2: Each GO should, pursuant to EOP-011-2 Requirement R7, identify in the cold weather preparedness plan, the Generator Cold Weather Critical Component(s),¹¹ and freeze protection measures implemented on those components prior to the 2023-2024 winter season.

Generator Cold Weather Critical Component¹² is defined as any generating unit component or associated fixed fuel supply component, that is under the GO's control, and is susceptible to freezing issues, the occurrence of which would likely lead to a Generator Cold Weather Reliability Event.

Generator Cold Weather Reliability Event is defined as one of the following events for which the apparent cause(s) is due to the freezing of equipment within the GO's control and the dry bulb temperature at the time of the event was at or above the ECWT: (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.

Essential Action #3: Each GO should identify which units are capable of operating at the ECWT as currently built and which units require additional freeze protection measures to operate at that temperature. For units that require additional freeze protection measures, GOs should determine which can be implemented prior to the 2023–2024 winter season and implement such measures.

Essential Action #4: Each GO should identify which units experienced a Generator Cold Weather Reliability Event in the 2022–2023 winter season and:

- Identify the cause(s);
- Determine applicability to similar equipment at other generating units;
- Determine corrective actions that can be implemented prior to the 2023–2024 winter season and implement such actions; and
- Identify any temporary operating limitations or impacts to the cold weather preparedness plan.

Essential Action #5: Per EOP-011-3, each TOP should update their Operating Plan(s) to include:

- Provisions to minimize the overlap of circuits that are designated for manual load shed and circuits that serve designated critical loads;

¹¹ This will be required in future versions of EOP-012

¹² [Extreme Cold Weather Preparedness: Technical Rationale and Justification for EOP-012-1](#) (nerc.com)

- Provisions to minimize the overlap of circuits that are designated for manual load shed and circuits that are utilized for underfrequency load shed (UFLS) or undervoltage load shed (UVLS);
- Provisions for limiting the utilization of UFLS or UVLS circuits for manual load shed to situations where warranted by system conditions; and
- Provisions for manual load shedding capable of being implemented in a timeframe adequate for mitigating the emergency.

These plans should be provided to the RC for review.

Essential Action #6: Per EOP-011, each BA should update their Operating Plan(s) prior to the next winter season, to include:

- Provisions for TOPs to implement operator-controlled manual load shed in accordance with Requirement R1 Part 1.2.5; and
- Managing generating resources in its BA Area to address:
 - Capability and availability;
 - Fuel supply and inventory concerns;
 - Fuel switching capabilities; and
 - Environmental constraints.

These plans should be provided to the RC for review.

Essential Action #7: Per Essential Actions #1 and #2, each GO should provide its RC, BA, and TOP the ECWT for its location prior to the next winter season and whether Generator Cold Weather Critical Component freeze protection measures will not be implemented on components prior to the 2023–2024 winter season.

Essential Action #8: Per the questions below on net winter capacity¹³ Megawatts (MW), each GO should share their responses with their respective BAs and TOPs to allow for updates to any operating plans before the 2023–2024 winter season.

**Reporting
Instructions:**

Initial acknowledgment of receipt is required by May 22, 2023, Midnight Eastern via the NERC Alert System. Responses to the questions below are

¹³ [Glossary - U.S. Energy Information Administration \(EIA\)](#)

required to be submitted via the NERC Alert System by October 6, 2023, Midnight Eastern.

To ensure a valid response in the NERC Alert System the submitting entity must:

- Acknowledge the Alert
- Submit a Response
- Approve the Response Being Submitted

The NERC Alert System contains menu options for each of the above commands that are available to authorized individuals upon login. A response will not be considered valid until all three steps have been completed.

All registered entities belonging to the BA, TOP, and GO functional groups are required to acknowledge receipt of this alert and respond, as applicable.

All registered entities covered by this Essential Action are required to provide an approved response as defined above to the following questions. Additionally, GO entities must complete and submit the provided Data Submission Worksheet. Use the “Add Additional Document” link on the NERC Alert System response web page to submit the completed worksheet(s).

GO Questions

NOTE: In all questions requesting “MWs”, the MW capacity shall be defined as the net winter capacity MW, NOT nameplate or any other measure.

*The MWs requested are only for the GO entity on behalf of which the response is being submitted. If your company is organized into multiple separate GOs, **do not provide total answers for the entire company** – ONLY provide answers for the MW owned by the registered entity.*

Please ensure that the answers to the multiple choice questions are consistent with the answers in your Data Submission Worksheet. Both items – the answers to the questions below, and the completed Data Submission Worksheet, are required to complete the alert response for GO entities.

- 1) How many total net winter capacity MWs does your entity own? (Answer the MWs owned ONLY for the GO Entity for which you are responding. If your organization has multiple registrations, each answer should be only for the MWs owned by that entity, **NOT the total MWs owned by the organization**)

- A. 0 MW
 - B. 1 – 100 MW
 - C. 101 – 500 MW
 - D. 501 – 1500 MW
 - E. 1501 – 5000 MW
 - F. Over 5000 MW
 - G. Not applicable, we are not registered as a GO
- 2) In the free text box below, write the number of net winter capacity MWs your GO entity owns as a number, without any abbreviations or units (For example, if the GO owns four 235MW units, type '940'). **This number should be consistent with your answer to Question 1.** If your entity is registered in multiple regions, provide region-specific answers. If you are not a GO, type "NA".
- 3) Have you calculated, or expect to calculate prior to the 2023–2024 winter season, an ECWT (as described in Essential Action 1) for some or all of your units?
- A. Yes, we have calculated, or expect to calculate, an ECWT for all of our units
 - B. Yes, we have calculated, or expect to calculate, an ECWT for some, but not all of our units
 - C. No, we have not performed this calculation and have no plans to perform this calculation
 - D. Not applicable, we are not registered as a GO or we have not calculated an ECWT
- 4) What percentage of your net winter capacity MWs are capable of operating at the ECWT at their location?
- A. 0%
 - B. 1 – 10%
 - C. 11 – 20%
 - D. 21 – 30%
 - E. 31 – 40%
 - F. 41 – 50%

- G. 51 – 60%
 - H. 61 – 70%
 - I. 71 – 80%
 - J. 81 – 90%
 - K. 91 – 100%
 - L. Not applicable, we are not registered as a GO, or we have not calculated an ECWT, or we have calculated the temperature for some of our units but not all of them
- 5) What percentage of your net winter capacity MWs are assessed as having an ECWT above 32 °F?
- A. 0%
 - B. 1 – 10%
 - C. 11 – 20%
 - D. 21 – 30%
 - E. 31 – 40%
 - F. 41 – 50%
 - G. 51 – 60%
 - H. 61 – 70%
 - I. 71 – 80%
 - J. 81 – 90%
 - K. 91 – 100%
 - L. Not applicable, we are not registered as a GO, or we have not calculated an ECWT, or we have calculated the temperature for some of our units but not all of them
- 6) What percentage of your net winter capacity MWs are assessed as having an ECWT between 31°F and 20 °F?
- A. 0%
 - B. 1 – 10%
 - C. 11 – 20%
 - D. 21 – 30%
 - E. 31 – 40%

- F. 41 – 50%
 - G. 51 – 60%
 - H. 61 – 70%
 - I. 71 – 80%
 - J. 81 – 90%
 - K. 91 – 100%
 - L. Not applicable, we are not registered as a GO, or we have not calculated an ECWT, or we have calculated the temperature for some of our units but not all of them
- 7) What percentage of your net winter capacity MWs are assessed as having an ECWT between 19°F and 10 °F?
- A. 0%
 - B. 1 – 10%
 - C. 11 – 20%
 - D. 21 – 30%
 - E. 31 – 40%
 - F. 41 – 50%
 - G. 51 – 60%
 - H. 61 – 70%
 - I. 71 – 80%
 - J. 81 – 90%
 - K. 91 – 100%
 - L. Not applicable, we are not registered as a GO, or we have not calculated an ECWT, or we have calculated the temperature for some of our units but not all of them
- 8) What percentage of your net winter capacity MWs are assessed as having an ECWT between 9°F and 0 °F?
- A. 0%
 - B. 1 – 10%
 - C. 11 – 20%
 - D. 21 – 30%

- E. 31 – 40%
- F. 41 – 50%
- G. 51 – 60%
- H. 61 – 70%
- I. 71 – 80%
- J. 81 – 90%
- K. 91 – 100%
- L. Not applicable, we are not registered as a GO, or we have not calculated an ECWT, or we have calculated the temperature for some of our units but not all of them

9) What percentage of your net winter capacity MWs are assessed as having an ECWT between -1°F and -10 °F?

- A. 0%
- B. 1 – 10%
- C. 11 – 20%
- D. 21 – 30%
- E. 31 – 40%
- F. 41 – 50%
- G. 51 – 60%
- H. 61 – 70%
- I. 71 – 80%
- J. 81 – 90%
- K. 91 – 100%
- L. Not applicable, we are not registered as a GO, or we have not calculated an ECWT, or we have calculated the temperature for some of our units but not all of them

10) What percentage of your net winter capacity MWs are assessed as having an ECWT between -11°F and -20 °F?

- A. 0%
- B. 1 – 10%
- C. 11 – 20%

- D. 21 – 30%
- E. 31 – 40%
- F. 41 – 50%
- G. 51 – 60%
- H. 61 – 70%
- I. 71 – 80%
- J. 81 – 90%
- K. 91 – 100%
- L. Not applicable, we are not registered as a GO, or we have not calculated an ECWT, or we have calculated the temperature for some of our units but not all of them

11) What percentage of your net winter capacity MWs are assessed as having an ECWT below -20 °F?

- A. 0%
- B. 1 – 10%
- C. 11 – 20%
- D. 21 – 30%
- E. 31 – 40%
- F. 41 – 50%
- G. 51 – 60%
- H. 61 – 70%
- I. 71 – 80%
- J. 81 – 90%
- K. 91 – 100%
- L. Not applicable, we are not registered as a GO, or we have not calculated an ECWT, or we have calculated the temperature for some of our units but not all of them

12) For what percentage of your net winter capacity MWs have you identified as the Generator Cold Weather Critical Components as described in Essential Action #2?

- A. 0%
- B. 1 – 10%

- C. 11 – 20%
- D. 21 – 30%
- E. 31 – 40%
- F. 41 – 50%
- G. 51 – 60%
- H. 61 – 70%
- I. 71 – 80%
- J. 81 – 90%
- K. 91 – 100%
- L. Not applicable, we are not registered as a GO

13) Did any of your units experience a Generator Cold Weather Reliability Event(s) in the 2022–2023 winter season as described in Essential Action #4?

- A. Yes
- B. No
- C. Not applicable, we are not registered as a GO

14) If your answer to Question 13 was “Yes,” please describe in the text box the cause or causes of the event(s). If your answer to Question 13 was not “Yes,” type “NA”

15) If your answer to Question 13 was “Yes,” what percentage of your net winter capacity MWs do you consider to be at risk of being impacted by the same cause(s) for the upcoming 2023–2024 winter season? (due to a known limitation or issue not mitigated by that time)

- A. 0%
- B. 1 – 10%
- C. 11 – 20%
- D. 21 – 30%
- E. 31 – 40%
- F. 41 – 50%
- G. 51 – 60%
- H. 61 – 70%

- I. 71 – 80%
- J. 81 – 90%
- K. 91 – 100%
- L. Not applicable, we are not registered as a GO, or our answer to Question 13 was not “Yes”

16) If your answer to Question 13 was “Yes,” what percentage of your net winter capacity MWs do you consider to be at risk of being impacted by the same cause(s) for the 2024–2025 winter season? (due to a known limitation or issue not mitigated by that time)

- A. 0%
- B. 1 – 10%
- C. 11 – 20%
- D. 21 – 30%
- E. 31 – 40%
- F. 41 – 50%
- G. 51 – 60%
- H. 61 – 70%
- I. 71 – 80%
- J. 81 – 90%
- K. 91 – 100%
- L. Not applicable, we are not registered as a GO, or our answer to Question 13 was not “Yes”

TOP Question

17) Have you updated, or expect to update prior to the 2023–2024 winter season, your Operating Plans as described in Essential Action #5?

- A. Yes
- B. No
- C. Not applicable, we are not registered as a TOP or another registered entity is responsible for performing this function according to a Coordinated Functional Registration (CFR), Joint Registration Organization (JRO), or other agreement

BA Question

18) Have you updated, or expect to update prior to the 2023–2024 winter season, your Operating Plans as described in Essential Action #6?

- A. Yes
- B. No
- C. Not applicable, we are not registered as a BA or another registered entity is responsible for performing this function according to a Coordinated Functional Registration (CFR), Joint Registration Organization (JRO), or other agreement

All Entities

19) Did you voluntarily complete any of the Essential Actions listed above for **Winter 2022–2023**?

- A. Yes, for all Essential Actions
- B. Yes, but not for all Essential Actions
- C. No
- D. Not completed yet but we plan to have them complete by the start of Winter 2023–2024

20) If you did not complete all or some of the Essential Actions prior to Winter 2022–2023, will you complete the outstanding Essential Actions for **Winter 2023–2024**?

- A. Yes, and we plan to complete all the outstanding Essential Actions prior to Winter 2023–2024
- B. Yes, and we will start working on some or all of the Essential Actions prior to Winter 2023–2024 but are not likely to complete all by that time
- C. No, and we have no plans to work on the Essential Actions prior to Winter 2023–2024

Additional Information:

The resource mix is undergoing significant change at a rapid pace. The system is becoming more reliant on variable energy resources and natural gas. Extreme winter weather events have stressed the supply of traditional fuels and the dependability of new resources. Preparation of resources for operation during extreme winter weather and situational awareness in both planning and

operations by applicable registered entities is necessary for optimal reliability. The following links provide additional information and best practices:

- [Reliability Guideline: Generating Unit Winter Weather Readiness](#)
- [Reliability Guideline: Gas and Electrical Operational Coordination Considerations](#)
- [Polar Vortex Review – September 2014](#)
- [Event Analysis Cold Weather Training Materials](#)
- [EOP-012-01 Extreme Cold Weather Preparedness and Operations](#)

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NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Level 3 Alert Essential Actions to Industry

Darrell Moore, Director

Situational Awareness and Personnel Certification & Credential Maintenance

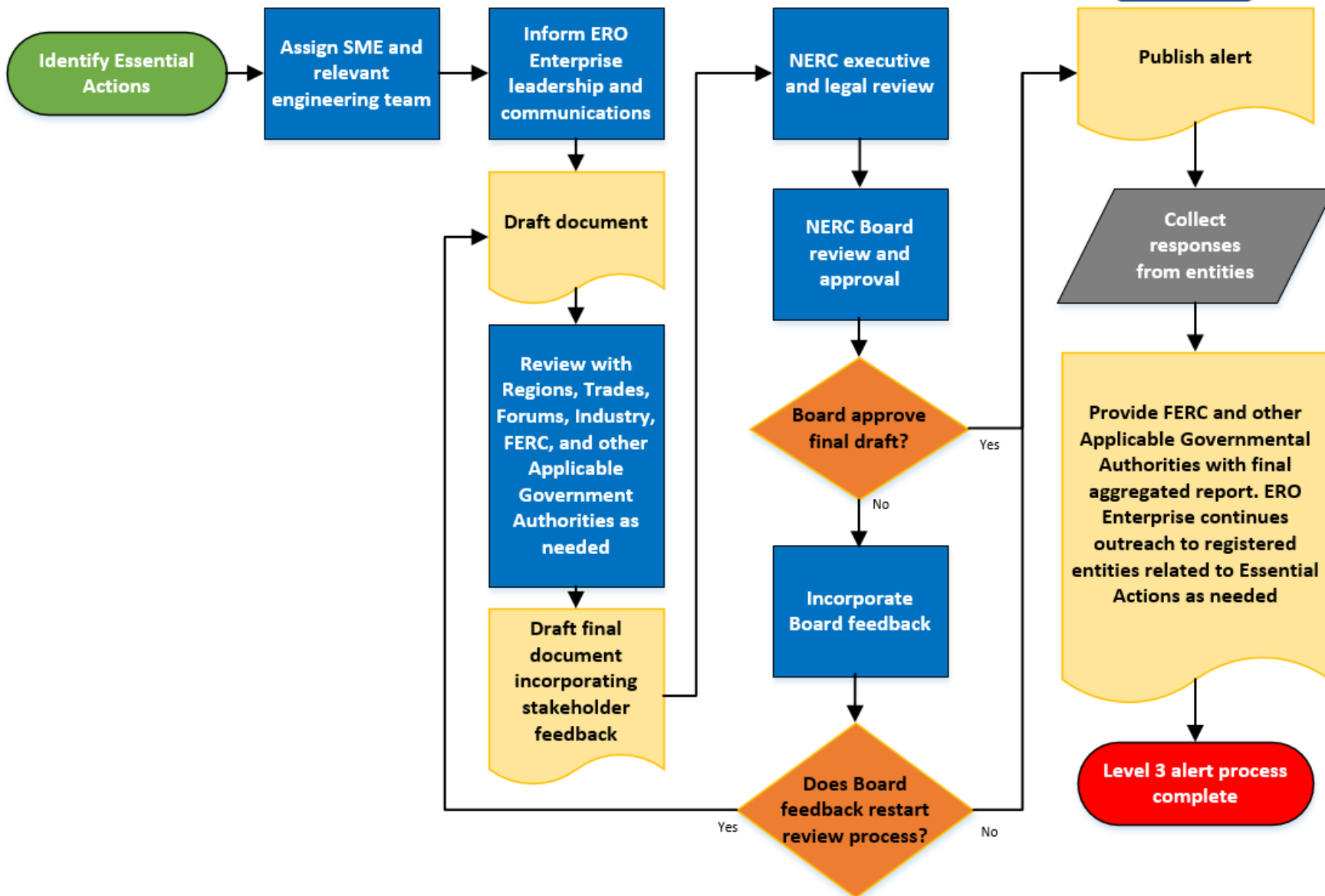
Board of Trustees Meeting

May 11, 2023

RELIABILITY | RESILIENCE | SECURITY



- Given the continuing impacts on reliability, the ERO Enterprise has determined A level 3 alert Essential Actions to Industry, the highest level alert, is required for the 2023–2024 winter season and beyond.
 - Several notable events have occurred demonstrating substantial impacts that extreme cold weather conditions can have on the reliability of the Bulk Power System. Most recent being 2022 Winter Storm Elliott, 2021 Winter Storm Uri, and the 2018 South Central United States Cold Weather Event.
 - In light of these events, and the recently expedited FERC approval of Cold Weather Reliability Standards, and the recent cold weather recommendations and advisory alerts NERC published from 2021–2023, it is necessary to understand how entities are taking steps to mitigate this risk.



- Essential Actions are specific actions that NERC has determined to be essential for certain segments of owners, operators, or users of the BPS to undertake to ensure the Reliable Operation of the BPS.
- There are 8 essential actions.
- Under the ROP Board approval is required prior to issuance of a level 3 alert Essential Actions to Industry.
- This would be the first level 3 alert Essential Actions to Industry issued by NERC.
- NERC Management is seeking Board approval to issue this Level 3 Alert Essential Actions to Industry, Cold Weather Preparations for Extreme Weather Events III.

A stylized map of North America is centered on the page. The map is divided into three horizontal color bands: a light purple band at the top covering Canada, a dark blue band in the middle covering the United States, and a light grey band at the bottom covering Mexico. The text "Questions and Answers" is overlaid on the dark blue band.

Questions and Answers

Request to Authorize Data Request – Internal Network Security Monitoring

Action

Authorize

- [Internal Network Security Monitoring Data Request](#)

Background

On January 19, 2023, the Federal Energy Regulatory Commission (FERC or the Commission) issued Order No. 887¹ directing NERC to develop Reliability Standards requirements to require internal network security monitoring for all high impact Bulk Electric System (BES) Cyber Systems and medium impact BES Cyber Systems with External Routable Connectivity. In addition, Order No. 887 directed NERC to conduct a study of the risks stemming from a lack of internal network security monitoring and the feasibility of requiring it for other BES Cyber Systems not subject to the revised standards, such as low impact BES Cyber Systems and medium impact BES Cyber Systems without External Routable Connectivity. As part of this study, the Commission stated that NERC should collect certain information on the number of these BES Cyber Systems. The Commission directed NERC to file the study by January 18, 2024, which is within 12 months of the issuance of Order No. 887.

Given the type of data and information to be collected, NERC staff recommended use of its authority under Section 1600 of the NERC Rules of Procedure. On February 16, 2023, the NERC Board of Trustees authorized NERC staff to use expedited procedures under Section 1606 of the NERC Rules of Procedure to meet the Commission directive. Consistent with the shortened procedures timeline, NERC posted the proposed data request for a 21-day comment period from March 24, 2023 through April 14, 2023. NERC provided advance notice of the posting to the FERC Office of Electric Reliability on March 8, 2023.

Summary

NERC requests Board authorization to issue the data request to the reporting entities. The data request would provide NERC with information needed to determine the quantity of locations and types of locations as directed by the Commission and enable NERC to complete its study within the directed deadline. Once authorized, the data request will be issued through the ERO Portal.

Additional Information

A link to additional material on the Internal Network Security Monitoring Data Request is included here for reference:

[\[Internal Network Security Monitoring Data Request - Redline to Draft\]](#)

[\[Internal Network Security Monitoring Data Request Response to Comments\]](#)

¹ 1 Internal Network Security Monitoring for High and Medium Impact Bulk Electric System Cyber Systems, Order No. 887, 182 FERC ¶ 61,021 (Jan. 19, 2023) [hereinafter Order No. 887], <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=F15F19FA-BDDF-C87E-94CA-85CB36100000>.