NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Agenda
Board of Trustees

May 8, 2025 | 10:30 a.m.-12:30 p.m. Eastern
Hybrid Meeting

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

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

Virtual Attendees *(including presenters)*
Webinar Link: Join Meeting
Attendees Password: Day2ATTMay825 (32922886 from phones)
Audio Only: +1-415-655-0002 US | +1-416-915-8942 Canada | Access Code: 2313 452 4007

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

Call to Order

Introduction and Chair's Remarks

NERC Antitrust Compliance Guidelines

Consent Agenda

1. **Minutes* - Approve**
   a. April 4, 2025 Open Meeting
   b. February 13, 2025 Open Meeting
2. **Finance and Audit Financial Statements - Approve**
   a. 2024 Audited Financial Statements

b. First Quarter 2025 Unaudited Statement of Activities

Regular Agenda

3. **Remarks and Reports**
   a. Remarks by Mark Christie, Chairman, Federal Energy Regulatory Commission
   b. Remarks by Derek Olmstead, President and CEO Alberta MSA, CAMPUT Representative
   c. President's Report
   d. Report on May 6, 2025 Board of Trustees Closed Meeting
4. **Standards Quarterly Actions**
   a. Milestone 3 for FERC Order 901 Filing* – **Update**
   b. Cold Weather and Lessons Learned from the 321 Actions* – **Update**
   c. Modernization Standard Processes and Procedures (MSPP) Task Force* – **Update**

Break – 15 mins

5. **Other Matters and Reports**
   a. Input Letter and Member Representatives Committee Meeting
   b. Regional Delegation Agreements* – **Approve**
   c. Level 3 NERC Alert Essential Actions to Industry: IBR Performance Modeling* – **Approve**
   d. NERC Action Plan on Large Loads Integration* – **Update**
6. **Board Committee Reports**
   a. Corporate Governance and Human Resources
   b. Regulatory Oversight Committee
   c. Finance and Audit
   d. Enterprise-wide Risk
   e. Technology and Security
   f. Nominating
7. **Other Matters and Adjournment**

*Background materials included.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Draft Minutes
Board of Trustees

April 4, 2025 | 10:30–11:30 a.m. Eastern
Virtual

Call to Order

Ms. Suzanne Keenan, Chair, called to order the duly noticed open meeting of the Board of Trustees (Board) of the North American Electric Reliability Corporation (NERC or the Corporation) on April 4, 2025, at approximately 10:30 a.m. Eastern, and a quorum was declared present.

Present at the meeting were:

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

NERC Staff
Tina Buzzard, Director, Board Operations and Corporate Governance
Manny Cancel, Senior Vice President and Chief Executive Officer of the E-ISAC
Jamie Calderon, Director, Standards Development
Shamai Elstein, Associate General Counsel
Howard Gugel, Senior Vice President, Regulatory Oversight
Kelly Hanson, Senior Vice President and Chief Operating Officer
Soo Jin Kim, Vice President, Engineering and Standards
Mark G. Lauby, Senior Vice President and Chief Engineer
Lauren Perotti, Assistant General Counsel
Sonia Rocha, Senior Vice President, General Counsel, and Corporate Secretary
Camilo Serna, Senior Vice President, Strategy and External Engagement

NERC Antitrust Compliance Guidelines

Ms. Buzzard directed the participants' attention to the NERC Antitrust Compliance Guidelines included in the advance agenda package and indicated that all questions regarding antitrust compliance or related matters should be directed to Mr. Elstein.

Introduction and Chair's Remarks

Ms. Keenan welcomed the attendees to the meeting. She noted that the purpose of the meeting is to consider the proposed Reliability Standard EOP-012-3 which completed development under the special processes for standards

provided in Section 321.5 of the NERC Rules of Procedure. Ms. Keenan noted that the Board did not take lightly the action before it. While the Board remains committed to the consensus process, NERC also has a responsibility to develop a standard to address an important reliability risk consistent with the Federal Energy Regulatory Commission (FERC) directives. Ms. Keenan thanked the Standards Committee and the industry volunteers who worked to develop the standard and address the numerous comments received from industry.

Ms. Keenan then reviewed the Board's responsibilities in making its decision. She noted that FERC has previously approved the general framework of the EOP-012 standard as just and reasonable, not unduly discriminatory or preferential, and in the public interest, while directing additional changes to clarify and improve the framework. The Board would therefore be focusing its attention on the changes to address these directives. Ms. Keenan reviewed the Board's obligation to make a finding that: (1) the applicable process was followed; (2) that the proposed standard appropriately considered all the comments provided throughout the process and addresses the FERC directives; and (3) that the proposed changes are just, reasonable, not unduly discriminatory or preferential, and in the public interest.

Ms. Keenan reported that the Board has received several materials from NERC Management to aid in its decision-making, including: (1) the industry comments from the final posting; (2) summaries of the approach taken, both procedurally and substantively; (3) an assessment of contrary positions and other comments considered; and (4) the legal criteria to be applied to its decision. She further noted that, given the information to be reviewed, the Board asked for additional time from FERC to make its determination.

Ms. Keenan then introduced Mr. Elstein to review the legal requirements. Mr. Elstein reviewed Section 321.5 of the NERC Rules of Procedure, which provides that the Board is authorized to approve a proposed Reliability Standard upon a finding that the standard, with such modifications as the Board determines appropriate in light of comments received, is just, reasonable, not unduly discriminatory or preferential, and in the public interest. Section 321.5 further states that in making such a determination, the Board should consider, among other things, whether the proposed standard is practical, technically sound, technically feasible, cost justified and serves the best interests of reliability of the bulk power system. Mr. Elstein also reviewed the factors identified by FERC in Order No. 672 in determining whether a proposed standard is just, reasonable, not unduly discriminatory, and in the public interest.

Project 2024-03 Revisions to EOP-012-2 Extreme Cold Preparedness and Operations

Ms. Kim reviewed the proposed Reliability Standard, noting that it addresses the FERC directives from the June 2024 order by clarifying the Generator Cold Weather Constraint framework, enhancing requirements for corrective action plans and timelines for addressing known freezing issues, requires any corrective action plan extensions to be approved by the Compliance Enforcement Authority, and requires new units entering commercial operation on or after October 1, 2027 to have the required cold weather capability by their commercial operation date.

Ms. Kim noted that there were several changes reflected in the proposed standard that were made in response to comments received during the Rules of Procedure Section 321.5 public comment period, including a revised definition of Generator Cold Weather Constraint, clarification of corrective action plan requirements, addition of an officer attestation requirement for certain economic Generator Cold Weather Constraints, and an updated implementation plan. She also noted that further revisions were made to the EOP-012-3 Generator Cold Weather Corrective Action Plan Extension and Constraint Process, a document maintained by the Compliance Monitoring and Enforcement Program.

Ms. Kim reported that the proposed standard includes a two-year compliance abeyance period intended to identify and address issues related to the calculation of the Extreme Weather Temperature. She noted that this provision was included following numerous industry concerns related to this calculation earlier in the development process.

Ms. Keenan led a discussion of the proposed standard. Ms. Kelly, Standards Committee Liaison, remarked on the continued engagement of industry following the Board invoking Section 321.5 of the Rules of Procedure and expressed her appreciation for their hard work. She stated that the proposed standard balances the various viewpoints raised while advancing reliability and addressing the FERC directives, and it meets the required standard for approval. Mr. Manning, Regulatory Oversight Committee Chair, echoed his appreciation for the small team who considered the stakeholder comments as well as the stakeholders for their helpful and constructive comments. He stated that the standard meets the technically feasible and practicality tests, although much work remains to be done, and that it will advance reliability. Other Trustees similarly expressed their support for the proposed standard and appreciation to NERC's stakeholders for their participation in this important effort.

Ms. Schmidt invited participants in the meeting to raise any further concerns that should be brought before the Board. None were raised.

After discussion, and upon motion duly made and seconded, the Board approved the following resolutions:

WHEREAS, on November 1, 2021, the Board, noting the demonstrated risks to reliability posed by multiple cold weather events over previous years, resolved to direct the development of new or revised Reliability Standards to address the recommendations of the February 2021 Event joint inquiry report for cold weather preparedness, operations, and coordination on a high priority basis;

WHEREAS, the Federal Energy Regulatory Commission (FERC) issued an order approving Reliability Standards EOP-011-3 and EOP-012-2 by order dated February 16, 2023, while directing NERC to submit further revisions to EOP-012 within one year of the date of the order;

WHEREAS, the Board adopted Reliability Standard EOP-012-2 on February 16, 2024, developed to address the directives of the February 16, 2023 Order;

WHEREAS, FERC issued an order on June 27, 2024, approving Reliability Standard EOP-012-2 and directing NERC to further revise the EOP-012 standard to address issues not fully resolved from the February 16, 2023 Order, and to submit a revised standard by March 27, 2025;

WHEREAS, on January 10, 2025, the Board, considering the standards development proceedings conducted to that time, determined it necessary and appropriate to appropriate to employ the special processes described in Rule 321.5 of the NERC Rules of Procedure to develop a proposed draft EOP-012-3 standard that is responsive to the matters identified in the directives issued by FERC in its June 27, 2024 Order;

WHEREAS, the Board directed the Standards Committee, with the assistance of stakeholders and NERC staff, to prepare a draft Reliability Standard responsive to the directives in FERC's June 27, 2024 Order to be posted for public comment by no later than January 29, 2025;

WHEREAS, a draft EOP-012-3 standard was prepared and posted for public comment from January 27, 2025 to March 12, 2025, and during this comment period, NERC received 43 sets of responses, including comments from approximately 108 different people from approximately 77 companies representing 7 of the industry segments;

WHEREAS, to ensure that each of these comments would be given due consideration, NERC requested that FERC grant NERC a modest extension of its June 27, 2024 Order deadline, from March 27, 2025 to April 14, 2025;

WHEREAS, the Board hereby expresses its appreciation to the Standards Committee and to NERC's stakeholders in developing a proposed standard through the alternative consensus building process provided in Section 321.5 of the NERC Rules of Procedure, and for addressing the FERC directives in the June 27, 2024

Order in a manner that balances the various interests raised throughout the process;

WHEREAS, the Board has considered the developmental record for the draft EOP-012-3 standard, including the comments received during the recent posting, and the recommendations of NERC Management for further modifications in light of the comments received;

WHEREAS, the Board has considered NERC Management's recommendation that the proposed Reliability Standard EOP-012-3, with modifications, is practical, technically sound, technically feasible, cost justified, and serves the best interests of the reliability of the Bulk-Power System, for the reasons stated more fully in the development record and advance agenda materials;

NOW, THEREFORE, BE IT RESOLVED, that the Board, upon the recommendation of NERC Management, hereby finds that the proposed Reliability Standard EOP-012-3, with the modifications made in light of the comments received, is just, reasonable, not unduly discriminatory or preferential, and in the public interest;

BE IT FURTHER RESOLVED, that the Board hereby approves the proposed Reliability Standard EOP-012-3, as presented to the Board at this meeting;

BE IT FURTHER RESOLVED, that the Board hereby approves the revised definition of Generator Cold Weather Constraint for inclusion in the *Glossary of Terms used in NERC Reliability Standards*, as presented to the Board at this meeting;

BE IT 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;

BE IT FURTHER RESOLVED, that the Board hereby approves the associated implementation plan for the proposed Reliability Standard, as presented to the Board at this meeting.

BE IT FURTHER RESOLVED, that the Board hereby approves the proposed retirement of Reliability Standard EOP-012-2, as presented to the Board at this meeting.

BE IT FURTHER RESOLVED, that the Board hereby directs NERC Management to file the proposed Reliability Standard EOP-012-3 to the Applicable Governmental Authorities, with a request that it be made effective, and to take such further actions and make such further filings as are necessary and appropriate to effectuate the intent of the foregoing resolutions.

Other Matters and Adjournment

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

Submitted by,

Sônia Rocha
Corporate Secretary

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Draft Minutes
Board of Trustees

February 13, 2025 | 10:30–1:00 p.m. Eastern

In-Person
JW Marriott Miami
1109 Brickell Ave
Miami, FL 33131

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 13, 2025, at approximately 10:30 p.m. Eastern, and a quorum was declared present.

Present at the meeting were:

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

NERC Staff
Tina Buzzard, Director, Board Operations and Corporate Governance
Manny Cancel, Senior Vice President and Chief Executive Officer of the E-ISAC
Mathew Duncan, Vice President, E-ISAC Security Operations and Intelligence
Shamai Elstein, Associate General Counsel
Howard Gugel, Senior Vice President, Regulatory Oversight
Kelly Hanson, Senior Vice President and Chief Operating Officer
Fritz Hirst, Vice President, Government Affairs
Stan Hoptroff, Vice President, Business Technology
Soo Jin Kim, Vice President, Engineering and Standards
Mark G. Lauby, Senior Vice President and Chief Engineer
Kimberly Mielcarek, Vice President, Communications
Sônia Rocha, Senior Vice President, General Counsel, and Corporate Secretary
Liz Saunders, Vice President, People and Culture
Andy Sharp, Vice President and Chief Financial Officer
Bluma Sussman, Vice President, E-ISAC Stakeholder Engagement

NERC Antitrust Compliance Guidelines

Ms. Buzzard directed the participants' attention to the NERC Antitrust Compliance Guidelines included in the advance agenda package and indicated that all questions regarding antitrust compliance or related matters should be directed to Ms. Rocha.

Introduction and Chair's Remarks

Mr. DeFontes welcomed the attendees to the meeting. He acknowledged that Mr. Clarke was retiring from the Board and recognized his contributions to the Board and NERC overall. Upon motion duly made and seconded, the Board approved the following resolution in Mr. Clarke's honor:

> **WHEREAS,** Robert G. Clarke has served as a member of the Board of Trustees of the North American Electric Reliability Corporation (NERC) for 12 years, including having served as Vice Chair of the Board, and the Chair of the Finance and Audit Corporate Governance and Human Resources, and Nominating Committees; and
>
> **WHEREAS,** as chair of the Corporate Governance and Human Resources Committee, Mr. Clarke provided leadership and guidance in the market compensation framework for both the Board of Trustees and NERC Executive Team, benchmarking criteria and supporting processes. He also played a pivotal role in the development of strategies and surveys to measure management and board effectiveness; and
>
> **WHEREAS**, as chair of the Finance and Audit Committee, Mr. Clarke led the Committee in ensuring a strong finance and accounting internal control environment by providing oversight of NERC finance and accounting procedures, as well as enhancing the quality and transparency of NERC's business plan and budget process, bringing a strong sense of fiscal responsibility and accountability to that process including aligning strategic priorities with resource allocation, leading to clear, FERC approved business plans and budgets; and
>
> **WHEREAS**, as chair of the Nominating Committee, Mr. Clarke led the successful searches for Trustees, having brought historical perspective and sensitivity to tradition while also leading the development and implementation of the new expanded level of attributes, skillsets and dashboard tools to ensure a diverse and experienced Board able to address the emerging risks to the bulk power system; and
>
> **WHEREAS**, Mr. Clarke provided invaluable counsel and advice to the Board Chair during his tenure as Vice Chair; and
>
> **WHEREAS**, Mr. Clarke has been a valued colleague and a good friend to the members of NERC's Board of Trustees.
>
> **NOW, THEREFORE, BE IT RESOLVED,** that the Board of Trustees of the North American Electric Reliability Corporation does hereby convey its deepest gratitude to Robert G. Clarke for his years of distinguished service and honors him on the occasion of his retirement as a member of the Board of Trustees.

Mr. DeFontes also recognized Jennifer Flandermeyer for her work as chair of the Member Representatives Committee MRC and presented her with a plaque.

Consent Agenda

Upon motion duly made and seconded, the Board approved the consent agenda as follows:

Minutes

The draft minutes for the December 10, 2024 and January 10, 2025 meetings were approved as presented to the Board at this meeting.

Committee Membership and Charter Amendments

Reliability and Security Technical Committee Membership and Charter Amendments

RESOLVED, that the Board hereby appoints the following individuals to the Reliability and Security Technical Committee ("RSTC") as follows, each for a two-year term ending December 31, 2027:

Sector Elected Members	
1. Investor-owned utility	Todd Lucas* (Southern Company)
2. State/municipal utility	Scott Klauminzer (Tacoma Public Utilities | Tacoma Power)
3. Cooperative utility	Marc Child* (Great River Energy)
4. Federal or provincial utility/Federal Power Marketing Administration	Gayle Nansel (Western Area Power Administration)
5. Transmission dependent utility	Nicola Parrota* (Taunton Municipal Lighting Plant)
6. Merchant electricity generator	Srinivas Kappagantula* (Arevon Energy)
7. Electricity Marketer	Mohammad Awad (Evergy)
8. Large end-use electricity customer	Vacant
9. Small end-use electricity customer	Darryl Lawrence* (Pennsylvania Office of Consumer Advocate)
10. Independent system operator/ regional transmission organization	Drew Bonser (ERCOT)
12. State Government	Christine Ericson* (Illinois Commerce Commission)
At-large Members	
David Jacobson*	Manitoba Hydro
Kevin Conway	Western Power Pool
David Wand	New Jersey Division of Rate Counsel
Cezar Panait*	Minnesota Public Utilities Commission
Marc-Antoine Roy*	Hydro Quebec
David Jacobson*	Manitoba Hydro
Kevin Conway	Western Power Pool
David Wand	New Jersey Division of Rate Counsel
Non-voting Members	
Kal Ayoub (FERC)	United States Federal Government
Bradley Little (Natural Resources Canada)	Canadian Federal Government

Reliability Issues Steering Committee Membership

RESOLVED, that the Board hereby appoints to the Reliability Issues Steering Committee ("RISC") the following At-Large and Member Representatives Committee (MRC) representatives for a two-year term concluding January 31, 2027 and the Standing Committees representatives for a one-year term concluding January 31, 2026:

At-Large Members

- Joe Sowell, Georgia Transmission Corporation
- Lee Ragsdale, North Carolina Electric Membership Corporation
- Nelson Peeler, Duke Energy
- Tom Galloway, NATF
- Chris Lincoln, New Brunswick Power
- Tim Kelley, SMUD
- Brian Slocum, ITC Holdings, Past Chair
- Felek Abbas, Southwest Power Pool
- John Babik, JEA
- Maurice Moss, American Clean Power Association
- Margaret Albright, Bonneville Power Admin

MRC Members

- Srinivas Kappagantula, Director, Regulatory Affairs, Arevon
- Colin Hansen, CEO and General Manager, KPP Energy

Standing Committees

- Scott Tomashefsky, Compliance and Certification Committee
- John Stephens, Reliability and Security Technical Committee
- Todd Bennett, Standards Committee

Personnel Certification and Governance Committee Membership

RESOLVED, that the Board hereby appoints the following individuals to serve as the chair and vice chair of the Personnel Certification and Governance Committee as follows:

Member Type/Term	Name/Organization
Proposed Chair Term expiring December 31, 2026	Michael Hoke, PJM Interconnection
Proposed Vice Chair Term expiring December 31, 2026	Marty Sas, SERC Reliability Corporation

Governance Documents Amendments

Northeast Power Coordinating Council, Inc. Amended Bylaws

RESOLVED, that the Board hereby approves the amended Northeast Power Coordinating Council, Inc. bylaws, substantially in the form 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 resolution.

Regular Agenda

Remarks by Tricia Pridemore, Commissioner, Georgia Public Service Commission, and NARUC President

Mr. Robb introduced Ms. Pridemore, noting that this marks the first time the president of NARUC attended a NERC meeting. Ms. Pridemore remarked on the common issues facing NERC and state commission, including increased demand, large loads, gas-electric coordination, and resource adequacy, and looked forward to increased engagement between state commissions and NERC. She discussed the various initiatives underway at NARUC to address these challenges. Ms. Pridemore commented the ITCS and stakeholder feedback to NERC as valuable to many state commissions as they consider infrastructure needs.

Remarks by Derek Olmstead, President and CEO Alberta MSA, CAMPUT Representative

Mr. DeFontes introduced Mr. Olmstead, CAMPUT Representative to NERC. Mr. Olmstead thanked the Board for opportunity to offer remarks and NERC management for its continued engagement with Canadian regulators. He noted NERC's participation at a senior level with Canadian regulators. Mr. Olmstead discussed Canada's complex regulatory structure and the common interest in addressing the challenges facing the electric industry.

President's Report

Mr. Robb provided the president's report. He paused for a moment of silence to acknowledge several tragedies, including the recent hurricanes, wildfires, and the plane crash in Washington, DC. He welcomed the guest speakers to the meeting, recognized Commissioner Willie Phillips of the Federal Energy Regulatory Commission (FERC or Commission) for his work as Chairmen, and congratulated Chairmen Mark Christie upon his recent appointment as chair of the Commission and Kal Ayoub upon his recent appointment to Director of the FERC Office of Electric Reliability. Mr. Robb noted the recent FERC order on NERC's Five-Year Performance Assessment, which included a supplement related to the use of an abeyance period that should address friction in Reliability Standards development. He also stressed his appreciation for continued collaboration with NARUC and Canadian regulators.

Mr. Robb paused his report at this time to allow Mr. Armando Pimentel, President and CEO, Florida Power & Light Company, to provide remarks.

Remarks by Armando Pimentel, President and CEO, Florida Power & Light Company

Jim introduced Mr. Pimental. Mr. Pimentel described Florida Power & Light Company and its affiliated companies. He noted the tremendous growth in Florida Power & Light Company's service territory and the need for a diversified fleet of generation resources to address weather resiliency and other reliability challenges. He discussed Florida Power & Light Company's work with its regulators to invest in infrastructure to ensure resiliency of its system while supplying affordable electricity to its customers. Mr. Pimental also discussed Florida Power & Light Company's strategic focus on NERC compliance and the forming of the NERC Information Command Center (NICC) to monitor compliance. Other utilities looking at our model.

President's Report (continued)

Following Mr. Pimental's remarks, Mr. Robb resumed the president's report. Mr. Robb discussed the grid's performance during recent cold weather events, noting that NERC and FERC will conduct a joint performance assessment on these events to begin in the near future, with any findings reported this Spring. He also discussed the

Board's use of Section 321 of the NERC Rules of Procedure to address FERC directives on the cold weather standard, EOP-012-2. Mr. Robb remarked that this was the second time the Board used 321 in recent months but stressed that NERC is still committed to our collaborative, stakeholder process. Mr. Robb also discussed NERC initiative to work with stakeholders to modernize the Reliability Standards development process. He stressed the value of bringing experts together from various areas, some of whom are not typically in NERC's ecosystem, and NERC's expectation that attendees act professionally at NERC events. Mr. Robb provided an update on the three year plan for 2026-2028 and thanked those stakeholders that participation in sector-by-sector meetings. He noted that NERC is working to incorporate much of the feedback.

Finally, Mr. Robb recognized Mr. DeFontes, as outgoing board chair; Mr. Clarke, who leaves the Board having served his maximum term limit; Ms. Jennifer Flandermeyer, outgoing chair of the Member Representatives Committee, and Mr. Hoptroff, who would soon be retiring from NERC.

Upon motion duly made and seconded, the Board approved the following resolution in Mr. Hoptroff's honor:

> **WHEREAS,** Stan Hoptroff, has served as the Vice President, Business Technology, of the North American Electric Reliability Corporation and led the company's Business Technology department since 2015;
>
> **WHEREAS,** externally, Mr. Hoptroff transformed NERC's CMEP process with the innovative implementation of Align and the Secure Evidence Locker. Mr. Hoptroff was integral in identifying and implementing technology to reduce reliability risk and significantly advance NERC's effectiveness and stature in furtherance of its mission; and
>
> **WHEREAS,** internally, Mr. Hoptroff consistently demonstrated the qualities of a remarkable leader, inspiring and guiding others with vision and integrity. As a mentor, coach and advisor his wisdom and dedication have profoundly impacted the growth and success of those fortunate enough to learn from him; and
>
> **WHEREAS,** Mr. Hoptroff's prior extensive experience at the highest levels of industry have been invaluable in shaping our vision and decision-making. The strategic counsel he provided has elevated our operations and driven success across the entire company; and
>
> **WHEREAS,** Mr. Hoptroff's collaborative spirit and genuine support have made him a trusted colleague and cherished friend to both NERC's Board of Trustees and management; and
>
> **NOW, THEREFORE, BE IT RESOLVED,** that the Board of Trustees of the North American Electric Reliability Corporation does hereby convey its deepest gratitude to Stan Hoptroff for his years of commitment and exemplary service, and honors him on the occasion of his retirement as Vice President, Business Technology.

Mr. Robb concluded his report with an update on the search for replacements for Mr. Hoptroff and Mr. Cancel.

Mr. Robb then introduced Mr. Jim Albright, President and CEO of Texas RE and co-chair of the ERO Executive Group. Mr. Albright remarked on the importance of the collective work of the ERO Enterprise and the need to celebrate collaboration. He noted that the joint board meeting held in the Fall of 2024 brought great alignment across the ERO Enterprise. He also pointed to the collaborative review and assessment of the large load disturbance and the state and provincial collaboration group.

Report on February 10-11, 2025 Closed Meetings

Mr. DeFontes reported that on February 10 and 11, 2025 the Board met in closed session with NERC management to review NERC management activities. On February 10 and 11, the Board held a strategy session with NERC management to explore strategic issues before NERC and provided guidance to the executive team, including on the

development of the next three-year plan for 2026-2028. In a separate closed meeting on February 11, 2025, the Board discussed the renewal of the Regional Delegation Agreements and discussed matters for this meeting. 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 discuss confidential matters.

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

Mr. DeFontes presented the recommendations for Board officers, noting that Ms. Keenan is succeeding him as Chair and Mr. Hawkins will serve as Vice Chair. Ms. Keenan presented the recommendations for Board 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 2025:

- Suzanne Keenan, 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 2025:

- Manny Cancel, Senior Vice President and Chief Executive Officer of the E-ISAC
- Howard Gugel, Senior Vice President, Regulatory Oversight
- Kelly Hanson, Senior Vice President and Chief Operating Officer
- Mark G. Lauby, Senior Vice President and Chief Engineer
- Sonia Rocha, Senior Vice President, General Counsel, and Corporate Secretary
- Andy Sharp, Vice President and Chief Financial Officer
- Camilo Serna, Senior Vice President, Strategy and External Engagement

FURTHER RESOLVED, that the Board, upon recommendation of the Chair, hereby approves the following 2025 Board Committee Assignments, as presented to the Board at this meeting.

Chair: Suzanne Keenan

Vice Chair: George S. Hawkins

Immediate Past Chair: Kenneth W. DeFontes, Jr.

Corporate Governance and Human Resources
Chair: Kristine Schmidt
Jane Allen
Kenneth W. DeFontes, Jr.
George S. Hawkins

Finance and Audit
Chair: Colleen Sidford
Robin E. Manning

Regulatory Oversight
Chair: Robin E. Manning
Kenneth W. DeFontes, Jr.
George S. Hawkins
Susan Kelly

Enterprise-wide Risk
Chair: Jim Piro
Jane Allen

Jim Piro
Kristine Schmidt

Technology and Security
Chair: Jane Allen
Larry Irving
Susan Kelly
Jim Piro

Larry Irving
Colleen Sidford

Nominating Committee
Chair: Larry Irving
Jane Allen
Kenneth W. DeFontes, Jr.
George S. Hawkins
Susan Kelly
Robin E. Manning
Colleen Sidford

MRC Members
John Haarlow, MRC Chair
Matthew Fischesser, MRC Vice Chair
Joel Dembowski
Jason Marshall

Related Assignments

- **Standards Committee Observer:** Susan Kelly
- **Reliability and Security Technical Committee Observer:** Susan Kelly
- **International Liaison:** Colleen Sidford
- ***Ex-officio* all committees:** Suzanne Keenan

Mr. DeFontes reflected on accomplishments during his four years as Board chair and thanked the Board and NERC and Regional entity staff and remarked on the valuable engagement of stakeholders. Ms. Keenan thanked Mr. DeFontes for all his contributions to the Board and NERC. Upon motion duly made and seconded, the Board approved the following resolution in Mr. DeFontes' honor:

WHEREAS, Kenneth W. DeFontes, Jr. has served as a member of the Board of Trustees of the North American Electric Reliability Corporation (NERC) for 9 years, including serving as Chair of the Board of Trustees the last four years from 2021-2025; and

WHEREAS, Mr. DeFontes as Chair of the Board of Trustees valued the outreach of the Board and established regular meetings with the Boards of the Regional Entities, with the U.S. and Canadian Regulators, as well as increased engagement with industry trade associations, and established joint meetings with the Member Representatives Committee, each proving an enhanced forum for collaboration and communication regarding issues facing the North American bulk power system; and

WHEREAS, Mr. DeFontes as Chair, provided leadership and courage to rethink historical norms to help position NERC to succeed by developing the Standards Proposal Advisory Group mapping out ways to increase the agility of the Standards Development Process, and directing the creation of the Modernize Standard Processes and Procedures (MSPP) Task Force to recommend a modernized standard development process that continues to have the earmarks of industry engagement while ensuring that Standard development can be completed in a timely manner; directing the creation of the Regulatory Oversight Committee to help oversee this critical initiative; and

WHEREAS, Mr. DeFontes as Chair, provided invaluable guidance and counsel to the NERC President and CEO and management as they navigated the unfamiliar territory of a pandemic, leading to a

transformational work force model focused on balancing organizational health with employee productivity; and spearheading the development of the organization's first ever three-year business plan; and broadly engaging the Board in strategic planning; and

WHEREAS, Mr. DeFontes, is a valued colleague and friend to the members of NERC's Board of Trustees.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Trustees of the North American Electric Reliability Corporation does hereby convey its deepest gratitude to Kenneth W. DeFontes, Jr. for his exemplary performance as the Chair of the NERC Board of Trustees.

Board Committee Reports

Corporate Governance and Human Resources Committee

Mr. Hawkins, Committee Chair, reported on recent Corporate Governance and Human Resources Committee meetings. At its February 12, 2025 open meeting, the Committee reviewed the proposed Board committee and full Board annual evaluation and committee mandate review processes for 2025, received a report on the Annual Conflict of Interest and Independence Report, reviewed the results of the Standing Committee self-assessments, hearing from each Standing Committee chair, and received an update on NERC's people and culture initiatives.

Regulatory Oversight Committee

Mr. Manning, Committee Chair, reported on recent Regulatory Oversight Committee meetings. At its January 10, 2025 open meeting, the Committee recommended that the Board use its authority under Section 321 of the Rules of Procedure to address FERC directives to modify cold weather Reliability Standards EOP-012. At its February 11, 2025 closed meeting, the Committee discussed the Registered Ballot Body, DER aggregators and emerging regulatory risks. At its February 12 open meeting, the Committee received an update on Reliability Standards development, Align, and the Compliance Monitoring and Enforcement Program.

Finance and Audit Committee

Mr. Piro, Committee member, reported on recent Finance and Audit Committee meetings. At its February 11, 2025 closed meeting, the Committee received an update on the current Investment Policy and Fund performance and Internal Audit provided the Committee with an update on assurance activities and audit plan status. At its February 12, 2025 open meeting, the Committee reviewed and recommended Board acceptance of (i) the NERC Fourth Quarter 2024 Unaudited Summary of Results; and (ii) the NERC and Regional Entity Combined (ERO) Fourth Quarter 2024 Unaudited Summary of Results. Management also provided an update on the preparation of the draft 2026 Business Plan and Budget and the development of the next three-year plan for 2026-2028. Upon motion duly made and seconded, the Board approved the following resolution:

RESOLVED, that the Board, upon recommendation of the FAC, hereby accepts the 2024 NERC, Combined ERO Enterprise, and Regional Entity Unaudited Statement of Activities, as presented to the Board at this meeting.

Enterprise-wide Risk Committee

Mr. Piro, Committee chair, reported on recent Enterprise-Wide Risk Committee meetings. At its February 11, 2025 closed meeting, the Committee discussed the top risks facing the company, federal policy and engagement, the ERM program maturity assessment and workplan, and the corporate compliance workplan, and received a report from the Align assurance group, the CCC, and ERO Enterprise oversight principles.

Technology and Security Committee

Mr. Piro, Committee member, reported on recent Technology and Security Committee meetings. At its February 12, 2025 open meeting, the Committee received an update from the NERC Business Technology group on its

implementation of the ERO Enterprise Business Technology Strategic Plan and discussed the results of the 2024 ERO Enterprise Business Technology client survey. The Committee also received a report from the E-ISAC on the threat landscape and their initiative to enhance the stakeholder experience.

Nominating Committee

Mr. Irving, Committee Chair, reported on recent Nominating Committee activities. He noted that the Committee reviewed potential candidates for the Board to replace Mr. Clarke but decided not to select a new candidate at this time. Given changes in industry, the Committee decided to defer the decision for additional review.

Semi-Annual Reports to the Board

Reliability and Security Technical Committee

Mr. Rich Hydzik, Committee Chair, highlighted the recent work of the Committee. Mr. Hydzik then presented the proposed 2025 Committee strategic plan and the elevation of the Committee Supply Chain Working Group to a subcommittee for the Board's approval. Upon motion duly made and seconded, the Board approved the following resolutions:

> **RESOLVED,** that the Board hereby approves the RSTC 2025 Strategic Plan, substantially in the form presented to the Board at this meeting.
>
> **RESOLVED,** that the Board hereby approves the elevation of the Reliability and Security Technical Committee Supply Chain Working Group to a Subcommittee.

Personnel Certification Governance Committee

Mr. Michael Hoke, Committee Chair, reported on the purpose and activities of the Committee and its two working groups. Mr. Hoke then presented the proposed 2025 Committee work plan and the modifications to the System Operator Certification (SOC) Program Manual for the Board's approval. Upon motion duly made and seconded, the Board approved the following resolutions:

> **RESOLVED,** that the Board hereby approves the Personnel Certification Governance Committee 2025 Work Plan, substantially in the form presented to the Board at this meeting.
>
> **RESOLVED,** that the Board hereby approves the revised System Operator Certification Program Manual, substantially in the form presented to the Board at this meeting, to replace the System Operator Certification Manual approved by the Board on February 15, 2024.

Standards Committee

Mr. Todd Bennet, Committee chair, provided an update on the activities of the Committee. He then presented the 2025-2027 SC Strategic Work Plan for the Board's approval. Upon motion duly made and seconded, the Board approved the following resolutions:

> **RESOLVED,** that the Board hereby approves the Standards Committee 2025-2027 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. Mr. Tomashefsky then presented the proposed 2025 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 2025 Work Plan, substantially in the form presented to the Board at this meeting.

Reliability Issues Steering Committee:

Ms. Teresa Mogensen, Committee Chair, provided an update on the activities of the Committee. She also reported on the Committee self-assessment.

Standards Quarterly Report and Actions

Regional Reliability Standard BAL-004-WECC-4

Ms. Kim presented proposed Regional Reliability Standard BAL-004-WECC-4. After discussion, and upon motion duly made and seconded, the Board approved the following resolutions:

RESOLVED, that that the Board hereby adopts the proposed Regional Reliability Standard BAL-004-WECC-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 Regional 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 Regional Reliability Standard BAL-004-WECC-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 2024-03 Revisions to EOP-012-2

Ms. Kim provided an update on the status of Project 2024-03 Revisions to EOP-012-2 and the actions taken during the January 10, 2025 Board open meeting. She thanks Mr. Todd Bennet and the Standards Committee for their work on developing a draft Reliability Standard pursuant to the Board's directive under Section 321 of the Rules of Procures. Ms. Kim reported that the draft Reliability Standard is posted for stakeholder comments, due March 12, 2025. The Board noted it will consider all stakeholder comments.

Modernize Standard Processes and Procedures (MSSP) Task Force

Mr. Lauby discussed formation of the Modernize Standard Processes and Procedures (MSPP) Task Force to recommend a modernized standard development process that continues to have the earmarks of industry engagement but also ensures that time for from risk identification and prioritization to Reliability Standards development can be completed on a much more efficient and effective manner. The Board discussed the need for and expectations of the task force. After discussion, and upon motion duly made and seconded, the Board approved the following resolutions:

WHEREAS, in February 2022, the Board directed NERC staff 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;

WHEREAS, NERC convened the Standards Process Stakeholder Engagement Group ("SPSEG") to consider the preliminary recommendations of NERC Staff and recommend changes to NERC's standard development processes;

WHEREAS, upon the recommendations of the SPSEG, NERC pursued changes to its Rules of Procedure regarding Reliability Standards development, undertook a review of the Registered Ballot Body, and coordinated with the Standards Committee, Reliability and Security Technical Committee, and the Standing Committee Coordinating Group to implement recommendations aimed at enhancing standards efficiencies in the operations of those groups;

WHEREAS, despite these recent enhancements, the Board finds that the speed at which risks to the reliability, security, and resiliency of the bulk power system (BPS) are emerging during the transformation to a decentralized, digitized, and decarbonized grid, are outpacing industry's ability to develop, enhance, and implement Reliability Standards under the existing procedures and processes;

WHEREAS, the Board finds it necessary to initiate a new collaborative effort, focused on transforming the current set of procedures and processes for standards development, that will serve NERC's stakeholders in a world that has a great deal of uncertainty and poses fast moving risks the reliability, security, and resiliency of the BPS;

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby establishes the Modernize Standard Processes and Procedures (MSPP) Task Force, to report to the Board;

BE IT FURTHER RESOLVED, the scope of the MSPP Task Force to bring forward a modernized standards development process that would continue to provide for reasonable notice and opportunity for public comment, due process, openness, and balance of interests in developing reliability standards consistent with Section 215 of the Federal Power Act, and would ensure that time for Reliability Standards development from risk identification and prioritization can be completed on a much more efficient and effective manner;

BE IT FURTHER RESOLVED, the Board hereby appoints Greg Ford as Chair and Todd Lucas as Vice Chair of the MSPP Task Force, and Trustees Susan Kelly and Robin E, Manning as members of the Committee, with the remaining members to be selected by NERC Management in consultation with the MSPP Task Force Chair and Vice-Chair;

BE IT FURTHER RESOLVED, that the MSPP Task Force shall convene as needed to address its scope and shall present its recommendations to the Board at the Board's February 2026 meeting;

BE IT FURTHER RESOLVED, that NERC Management is directed to provide an update to the Board on the work of the MSPP Task Force on a regular basis until complete.

Other Matters and Reports

Input Letter and Member Representatives Committee Meeting

Ms. Keenan, acknowledging the MRC's feedback on the Board's input letter related to large loads, as well as the large load discussion at the technical session on February 12, 2025, requested that Board to direct NERC to develop an action plan to further identify and address risks associated with large loads. Upon motion duly made and seconded, the Board approved the following resolutions:

WHEREAS, as the electric industry landscape continues to evolve, increasing amounts of large commercial and industrial loads, such as data centers (including crypto and AI), hydrogen fuel plants, etc., are connecting rapidly to the bulk power system, presenting unique challenges to forecasting and planning for increased demand;

WHEREAS, it is critical that this demand is integrated in a way that supports the reliable operation of the bulk power system, rather than reducing the grid's performance;

WHEREAS, it is important for NERC and industry to better understand large loads and the potential reliability impacts of the increasing integration and demand;

WHEREAS, NERC's Reliability and Security Technical Committee established a Large Loads Task Force to better understand reliability impacts; identify, validate, and prioritize risks; and identify gaps and mitigations of potential risks and NERC published a new incident review examining the risks and challenges posed by the increasing integration of voltage-sensitive large loads, such as data centers and cryptocurrency mining facilities;

WHEREAS, on January 9, 2025, the NERC Board of Trustees sent a letter to the NERC Member Representative Committee requesting input on the (1) risks to reliability, resilience, and security associated with the increasing integration of large loads to the bulk power system, and (2) actions NERC should take to address these emerging risks;

WHEREAS, the Board's February 12, 2025, Technical Session included a panel of industry representatives focused on the integration of large loads;

WHEREAS, both MRC input and the Technical Session identified the integration of large loads as an important issue of increased focus;

NOW THEREFORE BE IT RESOLVED, that the Board hereby direct NERC management to develop an action plan outlining the steps NERC will take to further identify and mitigate risks associated with the integration of large loads;

BE IT FURTHER RESOLVED, management shall provide that action plan to the Board at its May 2025 meeting.

TADS Section 1600 Data Request

Ms. Donna Pratt presented on the proposed extension of the TADS Section 1600 Data Request to include additional data, including certain geographical data for TADS elements, load loss data resulting from a transmission system outage, and additional equipment sub-cause codes. Upon motion duly made and seconded, the Board approved the following resolutions:

WHEREAS, NERC has required reporting of transmission data under Section 1600 of the NERC Rules of Procedure (ROP) through the Transmission Availability Data System (TADS) since 2008;

WHEREAS, NERC management identified the need to expand the TADS data collection to include: (1) geographical (longitude/latitude coordinates) data for TADS elements, to improve the accuracy of evaluating the extent of system outages, (2) load loss data resulting from a transmission system outage, to identify when there is an operational break in continuously transmitted electrical energy to planned in-service points, (3) the addition of equipment sub-cause codes to enhance the existing initiating and sustained equipment cause codes and increase NERC's ability to track and trend equipment failures with greater detail about transmission outages;

WHEREAS, the collection of this additional data would enhance NERC's ability to comprehensively measure critical aspects that support reliability of the North American and support NERC assessments under Section 215(g) of the Federal Power Act;

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby approves the expanded TADS Section 1600 Data Request, effective January 1, 2026, substantially in the form presented to the Board at this meeting.

Other Matters and Adjournment

Ms. Keenan deferred discussion of agenda items related to the Regional Delegation Agreements and the NERC.com modernization project, as well as updates from the North American Energy Standards Board, the North American Transmission Forum and the North American Generator Forum.

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

Submitted by,

Sônia Rocha
Corporate Secretary

Milestone 3 for FERC Order 901 Filing

Action
Update

Summary
The Federal Energy Regulatory Commission (FERC) issued Order No. 901 on October 19, 2023, which included directives on new or modified NERC Reliability Standard projects. FERC Order No. 901 addresses a wide spectrum of reliability risks to the grid from the application of Inverter - Based Resources, including both utility scale and behind-the-meter or distributed energy resources. Within Order No. 901, there are four milestones that include sets of directives to NERC. Milestone 3 of Order No. 901 addresses validation of models and data for generators. NERC Standards Development has identified three active projects (2020-06, 2021-01, and 2022-02) that are being developed to address Milestone 3. NERC staff hosted a joint workshop January 15-17, 2025, in Phoenix, AZ. During the workshop NERC staff and drafting team members reviewed the FERC directives associated with Milestone 3 and talked through concerns of industry prior to the development or modification of each standard(s) with its associated project. These projects are posting their initial drafts in April and May of this year.

Cold Weather and Lessons Learned from the 321 Actions

Action
Update

Summary
On June 27, 2024, the Federal Energy Regulatory Commission (FERC) issued an Order approving Reliability Standard EOP-012-2 and directing further revisions.[1] After several months of expedited standards development proceedings that failed to produce a consensus standard responsive to the June 2024 Order directives, the Board of Trustees (Board) took action at its January 10, 2025 meeting to initiate the special standard development rule described in Section 321.5 of the NERC Rules of Procedure.[2]

Under this rule, the Board directed the Standards Committee (SC) to work with stakeholders and NERC Staff to prepare a draft standard responsive to the June 2024 Order directives, to post that standard for a 45-day public comment period, and to present the standard and the record of development to the Board for its consideration. Consistent with the Board's resolution, the third draft of proposed EOP-012-3 was posted for a 45-day comment period from January 27, 2025, to March 12, 2025, with no accompanying ballot. Comments were reviewed by the SC representatives and NERC Staff for consideration of any further modifications to EOP-012-3. recommended revisions to address the comments received during the public comment period were developed and presented to the Board at its April 4, 2025, meeting. During this meeting, the Board unanimously approved the presented draft of EOP-012-3.

[1] *N. Am. Elec. Reliability Corp.*, 187 FERC ¶ 61, 204 (2024) ("June 2024 Order").

[2] Section 321 of the NERC Rules of Procedure allows the NERC Board of Trustees to take special actions when a ballot pool has failed to approve a proposed Reliability Standard that contains a provision to adequately address a specific matter identified in a directive issued by an Applicable Governmental Authority.

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Standards Development

Milestone 3 for Order 901 Filing
Cold Weather and Lessons Learned from 321 Actions

Soo Jin Kim, Vice President, Engineering, Standards, and PRISM
Board of Trustees Open Meeting
May 8, 2025

Milestone 3 Order 901

Project 2022-02

- Establish Uniform Modeling Framework
- Aggregated nonregistered IBR and IBR-DER

Project 2020-06

- Generator Owner Model Validation
- Performance-based

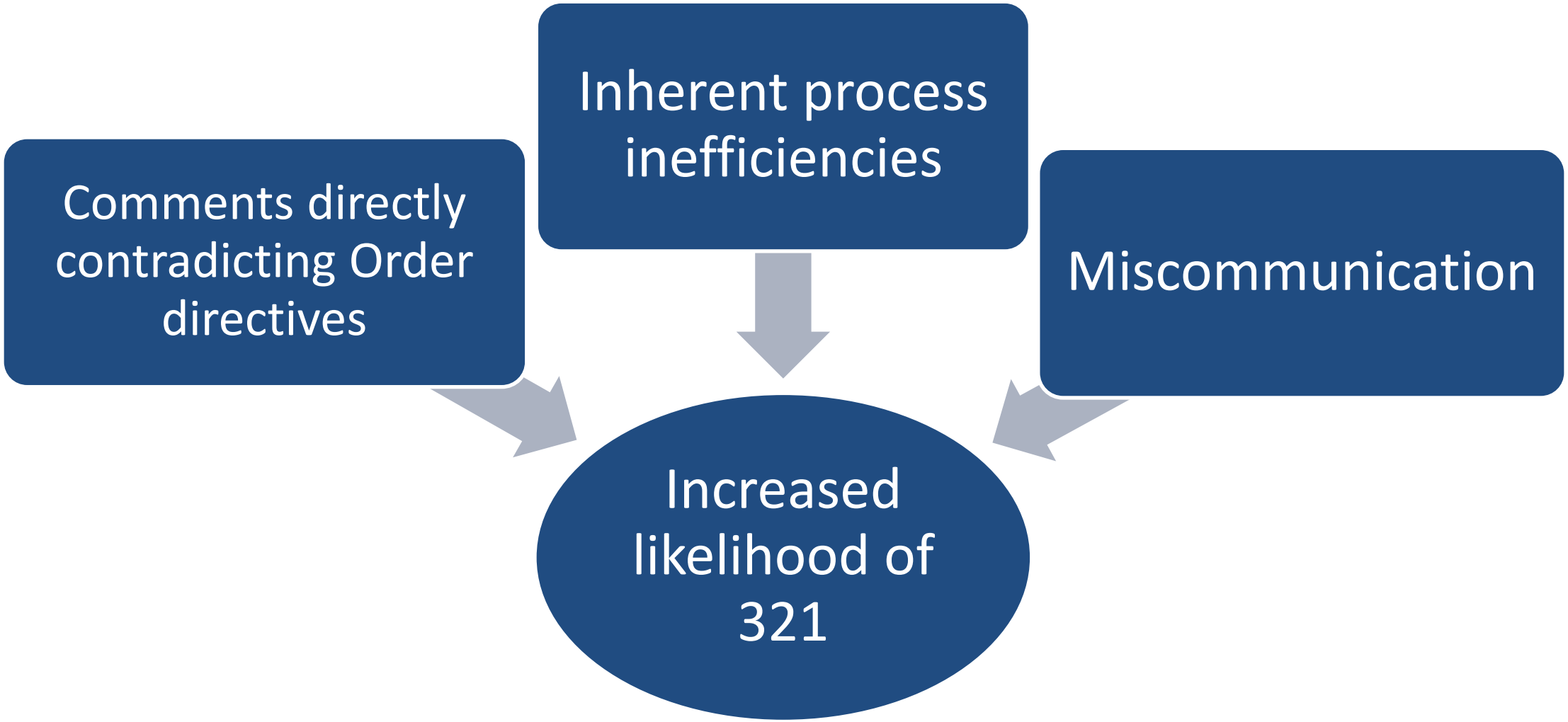
Project 2021-01

- Operator/Planner System Model Validation
- Performance-based

Project 2024-03 Revisions to EOP-012-2

- Board approved Cold Weather Reliability Standard during April 4, 2025 Special Board Call
- EOP-012-3 – Extreme Cold Weather Preparedness and Operations

Contributing Factors



NERC Lessons Learned

CONVERGE STRATEGIES

Participation

Industry

Figure out how team members with interest and availability can participate and be engaged in working groups, task force, and drafting teams.

NERC

Figure out how 'new participants' can get involved earlier the process.

Drafting Team

Industry

Composition, industry engagement and coordination, standard goals.

NERC

Teams need to figure out a way to address costs.

FERC Engagement

Industry

Revisit engagement process, timing and timeline, guidance.

NERC

In-depth engagement every step of the way.

NERC Lessons Learned

CONVERGE STRATEGIES

Technical Conference

Industry	NERC
Improved process for scoping, planning, executing technical conferences in support of SAR/321.	Technical conferences/ workshops are a best practice to create objectives and get people aligned.

Metrics

Industry	NERC
Maturation of metrics for Standards development processes would be helpful.	N/A

General Process

Industry	NERC
Standardized approach for establishing decision/inflection points in the standards lifecycle to determine if the standard needs to shift to an alternate approach.	The 321/322 process is painful and time consuming (e.g.: record of development is very long) Takeaway is that Industry prefers more ballots generally

Questions and Answers

Modernization of Standards Processes and Procedures Task Force Update

Action
Update

Summary
At its February 2025 meeting, the NERC Board of Trustees (Board) passed a resolution forming an industry-led Modernization of Standards Processes and Procedures Task Force (MSPPTF) to undertake a strategic review of NERC's Reliability Standards development process. The MSPPTF's work will focus on transforming current processes and procedures to ensure that standards can be developed more efficiently and effectively to better address the complex and rapidly evolving risk landscape. The MSPPTF will take a clean slate approach and consider the spectrum of the current standards program including processes, balloting, drafting and the roles of team and committee members. The MSPPTF will also review prior standard improvement efforts and recent 321 actions for lessons learned.

Maintaining a collaborative stakeholder-based process that reflects the balance of interests will be one of the guiding principles of the initiative. All recommended changes to the processes and procedures must continue to provide for reasonable notice and opportunity for public comment, due process, openness, and balance of interests in developing reliability standards consistent with Section 215 of the Federal Power Act.

The Board appointed Greg Ford, president and chief executive officer (CEO) of Georgia System Operations Corporation, to serve as chair, and Todd Lucas, vice president of Transmission Operations and Policy at Southern Company, as vice chair. MSPPTF membership also includes NERC Board members Susan Kelly and Rob Manning, the chairs of the Standards Committee (SC), the Reliability and Security Technical Committee (RSTC), and the Compliance and Certification Committee (CCC), and U.S. and Canadian industry representatives. The complete roster is available on the NERC website: MSPP Task Force Roster.

The MSPPTF will provide the Board with regular updates throughout this effort with recommendations to be presented to the Board at the February 2026 meeting. At the May 8, 2025, Board meeting, Greg Ford and Todd Lucas will provide an update on the MSPPTF efforts.

Stakeholder feedback and input will be critical to the success of this effort and the MSPPTF is developing a robust communications and outreach plan that will include opportunities for stakeholder input. All public resources and updates will be posted on the MSPPTF webpage on the NERC website (accessible under the 'Initiatives' tab): MSPPTF webpage.

Modernization of Standards Processes and Procedures (MSPP) Task Force

Greg Ford, MSPP Task Force Chair
Todd Lucas, MSPP Task Force Vice Chair
NERC Board of Trustees Meeting
May 8, 2025

Overview

Full Process Rebuild

Fresh perspective to re-envision a modernized standards process to address evolving risks

Create Efficiencies

Identify areas of opportunity to save time and remove redundant steps

Develop a Trusted Process

Provide clear opportunities for stakeholder input, due process, openness, and balance of interests

Inputs and Considerations

- Previous standards improvement efforts
- Section 321 lessons learned
- Comparison of standards processes
- Implementation impact
- Stakeholder input

Activities to Date

- Task force established
- Developed and published scope document
- Aligned on goals and objectives
- Identified initial areas of opportunity to address pain points in the process
- Developing comprehensive communications and outreach plan

Timeline

Q2 2025

- Developed scope document
- Identified areas for improvement

Q3 2025

- Develop strawman draft of recommendations
- Solicit stakeholder input

Q4 2025

- Solicit stakeholder input
- Finalize recommendations

Q1 2026

- Present recommendations to NERC board

Communications and Engagement

- Individual task force engagement
- General communications to and broad engagement with industry and stakeholders
- Updates to NERC's Board, MRC, Standing Committee, and Industry Groups

Questions and Answers

Regional Delegation Agreements

Action

Approve the revised *Pro Forma* and Regional Entity-specific Regional Delegation Agreements (RDAs) and authorize staff to file with the Federal Energy Regulatory Commission (FERC). Links to the clean and redline drafts of the proposed RDAs are provided below.

Background

The currently effective RDAs between NERC and the Regional Entities expire on December 31, 2025. To continue delegating certain of its statutory functions to the Regional Entities, NERC and the Regional Entities must renew their RDAs by January 1, 2026. The NERC Board of Trustees (Board), Regional Entity governing bodies, and FERC must approve the renewed RDAs prior to them becoming effective.

Management requests Board approval of a revised *Pro Forma* RDA and revised Regional Entity-specific RDAs. Once approved by the Board and the governing bodies of each Regional Entity, management will file the revised RDAs with FERC, requesting an order approving the RDAs in advance of January 1, 2026.

Summary

RDA Background

The RDAs set forth the terms and conditions under which NERC, as the FERC-certified Electric Reliability Organization (ERO) under Section 215 of the Federal Power Act (FPA), delegates certain of its statutory responsibilities to the Regional Entities. Under FPA Section 215 and FERC's implementing regulations, NERC may delegate certain of its statutory ERO functions to Regional Entities, provided it does so pursuant to a FERC-approved *Pro Forma* RDA and Region Entity-specific RDAs.

A Regional Entity's authority to conduct FPA Section 215 activities – e.g., propose Reliability Standards to the ERO, conduct compliance monitoring and enforcement activities, perform reliability assessments, and engage in other activities supporting NERC's ERO functions (registration, certification, etc.) – thus derives from NERC's delegation of its FPA authorities pursuant to the RDAs.

The Regional Entity RDAs are comprised of the *Pro Forma* RDA, incorporating any Regional Entity-specific deviations, and Regional Entity-specific exhibits that outline the boundaries of each Regional Entity and account for any differences between the Regions as it relates to, for instance, the Compliance Monitoring and Enforcement Program (CMEP) or assessment collection.

The RDAs only govern NERC's delegation of functions to Regional Entities within the United States. NERC and Regional Entity activity in Canada is governed by the Memoranda of Understanding NERC has with each of the Canadian provincial authorities and the relevant Regional Entity.

The RDAs have 5-year terms. Since FERC's approval of the first *Pro Forma* RDA in 2006, NERC has made three sets of revisions to the RDAs in 2010, 2015, and 2020.

Proposed Revisions to the RDAs

The proposed revisions to the *Pro Forma* RDA are designed to advance the goals of the ERO Enterprise more efficiently and effectively and enhance collaboration and coordination across ERO Enterprise activities. The chief revisions focus on the following areas:

- Requiring increased collaboration, coordination, and consistency in the Reliability Assessments, Performance Analysis, and Event Analysis program areas.
- Requiring greater coordination and engagement with U.S. federal and state governments.
- Ensuring that NERC and the Regional Entities abide by certain security principles, policies, and procedures and, to the extent appropriate, use common IT and security tools across the ERO Enterprise.
- Clarifying that Regional Entity personnel must comply with the E-ISAC Code of Conduct in its engagements with the E-ISAC.
- Clarifying NERC's review and audit authority under the RDAs (as distinguished from its CMEP oversight responsibilities under the NERC Rules of Procedure).

The revised *Pro Forma* RDA was posted for public comments from April 8-18, 2025. NERC did not receive any comments on the revised *Pro Forma* RDA. Management will discuss any stakeholder comments at the open Board meeting.

Next Steps

As noted above, the Board, Regional Entity governing bodies, and FERC must approve the renewed RDAs prior to them becoming effective. Once approved by the Board and the governing bodies of each Regional Entity, management will file the revised RDAs with FERC, requesting an order approving the RDAs in advance of January 1, 2026. NERC expects that all of the Regional Entity governing bodies will approve their revised RDAs by mid-June 2025 and file the RDAs with FERC shortly thereafter.

Links to the Revised RDAs:

- *Pro Forma* RDA - clean
- *Pro Forma* RDA - Redline

- Midwest Reliability Organization RDA - clean
- Midwest Reliability Organization RDA - Redline

- Northeast Power Coordinating Council RDA - clean
- Northeast Power Coordinating Council RDA - redline

- ReliabilityFirst RDA - clean
- ReliabilityFirst RDA - redline

- SERC Reliability Corporation RDA - clean
- SERC Reliability Corporation RDA - redline

- Texas Reliability Entity RDA – clean
- Texas Reliability Entity RDA – redline

- Western Electricity Coordinating Council RDA - clean
- Western Electricity Coordinating Council RDA - redline

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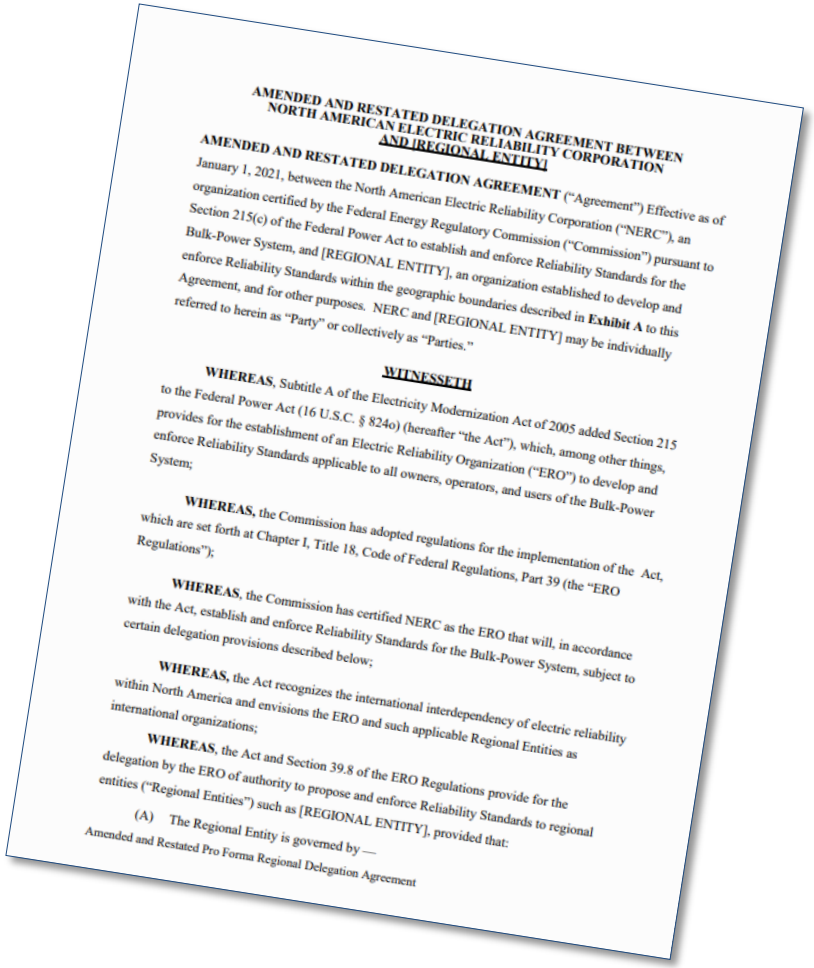
Regional Delegation Agreement Renewal

Shamai Elstein, Associate General Counsel
Board of Trustees Meeting
May 8, 2025

Regional Delegation Agreement

- The RDAs set forth the terms and conditions under which NERC, as the certified ERO, delegates certain of its responsibilities under the Federal Power Act (FPA) to the Regional Entities.
- A Region's authority to conduct FPA activities derives from NERC's delegation of its authorities under the RDAs.
- The FPA and FERC regulations require NERC to obtain FERC approval of any agreement delegating its authority to Regional Entities.
- The RDAs are comprised of the pro forma RDA and Region-specific deviations and exhibits that outline, for instance, the boundaries of each Region and account for any differences between the Regions as it relates to CMEP or assessment collection.
- The current RDAs expire on December 31, 2025, and will need to be renewed by January 1, 2026.



AMENDED AND RESTATED DELEGATION AGREEMENT BETWEEN
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION
AND [REGIONAL ENTITY]

AMENDED AND RESTATED DELEGATION AGREEMENT ("Agreement") Effective as of January 1, 2021, between the North American Electric Reliability Corporation ("NERC"), an organization certified by the Federal Energy Regulatory Commission ("Commission") pursuant to Section 215(c) of the Federal Power Act to establish and enforce Reliability Standards for the Bulk-Power System, and [REGIONAL ENTITY], an organization established to develop and enforce Reliability Standards within the geographic boundaries described in **Exhibit A** to this Agreement, and for other purposes. NERC and [REGIONAL ENTITY] may be individually referred to herein as "Party" or collectively as "Parties."

WITNESSETH

WHEREAS, Subtitle A of the Electricity Modernization Act of 2005 added Section 215 to the Federal Power Act (16 U.S.C. § 824o) (hereafter "the Act"), which, among other things, provides for the establishment of an Electric Reliability Organization ("ERO") to develop and enforce Reliability Standards applicable to all owners, operators, and users of the Bulk-Power System;

WHEREAS, the Commission has adopted regulations for the implementation of the Act, which are set forth at Chapter I, Title 18, Code of Federal Regulations, Part 39 (the "ERO Regulations");

WHEREAS, the Commission has certified NERC as the ERO that will, in accordance with the Act, establish and enforce Reliability Standards for the Bulk-Power System, subject to certain delegation provisions described below;

WHEREAS, the Act recognizes the international interdependency of electric reliability within North America and envisions the ERO and such applicable Regional Entities as international organizations;

WHEREAS, the Act and Section 39.8 of the ERO Regulations provide for the delegation by the ERO of authority to propose and enforce Reliability Standards to regional entities ("Regional Entities") such as [REGIONAL ENTITY], provided that:

(A) The Regional Entity is governed by —

Amended and Restated Pro Forma Regional Delegation Agreement

Proposed Revisions

- Require greater coordination, collaboration, and consistency in our Reliability Assessment, Performance Analysis, and Event Analysis Program Areas
- Clarify NERC's review/audit authority under the RDAs
- Ensure that NERC and the Regional Entities abide by certain security principles, policies, and procedures and, to the extent appropriate, use common IT and security tools across the ERO Enterprise
- Clarifying that Regional Entity personnel must comply with the E-ISAC Code of Conduct in its engagements with the E-ISAC
- Require greater coordination and engagement with U.S. federal and state governments

Questions and Answers

Level 3 Alert Essential Actions to Industry
Inverter-Based Resource Performance and Modeling

Action
Approve

Background
Since 2016, NERC has analyzed numerous major events totaling more than 15,000 MW of unexpected generation reduction. These major events were not predicted through current planning processes. Furthermore, NERC studies were not able to replicate the system and resource behavior that occurred during the events, indicating systemic deficiencies in industry's ability to accurately represent the performance of Inverter-Based Resources (IBR) and study the effects of IBR on the bulk power system (BPS).

In response to these disturbances, NERC has issued 10 major event reports and four Level 2 Alerts. Responses to the Level 2 Alert: IBR Performance Issues show that the recommendations set forth in the Level 2 Alert, NERC guidelines, disturbance reports, and Lessons Learned, are not being implemented by GOs and that many GOs indicated that they did not have the requested facility data readily available.

Assessment of the data received and feedback from entities during the Level 2 Alert: IBR Model Quality Deficiencies provided additional evidence of the critical findings above. NERC issued its second-ever deadline extension for this alert due to numerous questions and comments received that indicated the requested data was still not readily available, resulting in another extremely low data submission worksheet submittal rate.

Summary
This Level 3 Alert is being issued to Transmission Owners (TO), Transmission Planners (TP), Planning Coordinators (PC), and currently registered Generator Owners (GO) to enhance technical minimum requirements, study processes and modeling accuracy to predict and mitigate risks posed by IBR performance during system disturbances. In developing the proposed Level 3 Alert, NERC provided Regional Entities, FERC, and other applicable governmental authorities with the opportunity to provide comments.

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

1. Each TO and TP, in coordination with their PC, should enhance the existing criteria and policies in their generator interconnection and planning activities, respectively, with additional technical details and IBR-specific performance criteria.
2. Each TP and PC should enhance their modeling and study practices to ensure sufficient study work and model quality verification are performed and documented to reflect models that are representative of installed, or to-be installed, equipment.
3. TOs, TPs, or PCs, where applicable, should perform a detailed review of currently operating IBRs on their system to understand the extent of condition of both real-world performance and accuracy of their models.
4. Each GO should create and implement processes to help ensure the models used for the evaluation of their design and submitted to TPs and PCs for use in generator

interconnection and planning processes are—to the extent possible based on the available information—accurate and high-fidelity representations of their IBR.

The alert timeline is as follows:

- Publishing date: May 20, 2025
- Distribution: GOs, TPs, TOs, and PCs
- Response: Reporting required by Midnight Eastern on August 29, 2025
- FERC Report: Due September 29, 2025

The Alert seeks responses from entities registered as Generator Owner (GO), Transmission Planner (TP), Transmission Owner (TO), and Planning Coordinator (PC). The TOs will be required to answer 3 questions, the TPs and PCs will answer 5 questions, and the GOs will answer 5 questions. Since no data submissions are required, we expect this alert to be much less time-consuming and resource-intensive than prior alerts.

NERC will compile and share the responses with FERC in accordance with the Rules of Procedure. NERC will coordinate with the Regional Entities on outreach and follow up with the registered entities that respond 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 and their timelines.

NERC Management is seeking Board approval to issue this Level 3 Alert Essential Actions to Industry regarding Inverter-Based Resource Performance and Modeling.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

DRAFT Essential Actions to Industry

Inverter-Based Resource Performance and Modeling

Initial Distribution: XXXX XX, 2024

NERC is issuing this *Level 3 Alert: Essential Actions for Inverter-Based Resource (IBR)[1] Performance and Modeling* to Transmission Owners (TO), Transmission Planners (TP), Planning Coordinators (PC), and currently registered Generator Owners (GO) to enhance technical minimum requirements and study processes to mitigate risks posed by IBR performance during system disturbances.

Since 2016, NERC has analyzed numerous major events totaling more than 15,000 MW of unexpected generation reduction. These major events were not predicted through current planning processes. Furthermore, NERC studies were not able to replicate the system and resource behavior that occurred during the events, indicating systemic deficiencies in industry's ability to accurately represent the performance of IBRs and study the effects of IBR on the bulk power system (BPS).

In response to these disturbances, NERC has issued 10 major event reports and four Level 2 Alerts. The *Level 2 Alert: IBR Performance Issues*[2] findings report contains the following critical findings:

- **(i) The voluntary recommendations set forth in NERC guidelines and other publications are not being implemented by GOs.**
- **(ii) Many GOs indicated that they did not have the requested facility data readily available.**
  - **a. The information requested in the worksheet is fundamental equipment information that NERC expects would be retained and easily accessible with some assistance from equipment manufacturers, if necessary.**

Assessment of the data received and feedback from entities during the *Level 2 Alert: IBR Model Quality Deficiencies*[3] provided additional evidence of the critical findings above. NERC issued its second-ever deadline extension for this alert due to numerous questions and comments received that indicated the requested data was still not readily available, resulting in another extremely low data submission worksheet submittal rate.

The information provided in response to this alert will also be of use to the potential Standards Drafting Team (SDT) working on the Reliability Standard FAC-001 and FAC-002 Standard Authorization Request sent by the Reliability and Security Technical Committee (RSTC) to the Standards Committee (SC). NERC anticipates that the data obtained will support effective and efficient review of the modeling issues by any SDT.

[1] Inverter-Based Resource (IBR): A plant/facility consisting of individual devices that are capable of exporting Real Power through power electronic interface(s), such as an inverter or converter, and that are operated together as a single resource at a common point of interconnection to the electric system. Examples include, but are not limited to, plants/facilities with solar photovoltaic (PV), Type 3 and Type 4 wind, battery energy storage system (BESS), and fuel cell devices.

[2] https://www.nerc.com/comm/RSTC_Reliability_Guidelines/NERC_Inverter-Based_Resource_Performance_Issues_Public_Report_2023.pdf

[3] https://www.nerc.com/pa/rrm/bpsa/Alerts%20DL/NERC%20Alert%20Level%202%20-%20Inverter-Based%20Resource%20Model%20Quality%20Deficiencies.pdf

Why am I receiving this? >>
About NERC Alerts >>

Status:	**Acknowledgement Required by Midnight Eastern on XXXX XX, 2024** **Reporting Required by Midnight Eastern on XXXX XX, 202X**
	**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),[4] 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 Federal Energy Regulatory Commission (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.
Distribution:	**Initial Distribution:** Generator Owner (GO), Transmission Planner (TP), Transmission Owner (TO), Planning Coordinator (PC) 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 do the following: • Require registered entities to acknowledge receipt of these Essential Actions within the NERC Alert System.

[4] NERC Rules of Procedure

- Require registered entities to respond to the questions.
- Urge 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.

Please note that all Essential Actions urged herein should be implemented in agreement with NERC Reliability Standards, as appropriate for the Applicable Entity. Such Reliability Standards could include those being developed in accordance with NERC's work in response to FERC Order No. 901. Further, as noted above, NERC anticipates that the data gathered through this alert will be of use in any project following the Reliability Standard FAC-001 and FAC-002 SAR sent by the RSTC to the SC in September 2024. Please see NERC's Reliability Standards Under Development page[5] for more details regarding this effort and NERC's Reliability Standards One-Stop-Shop[6] for links to standards, implementation plans, project pages, Reliability Standards Audit Worksheets, FERC Orders, and compliance guidance. Last, nothing herein should be interpreted to conflict with FERC or state requirements.

Essential Actions for TOs, TPs, and PCs:

Essential Action #1: Each TO and TP, in coordination with their PC, should enhance the existing criteria and policies in their generator interconnection and planning activities, respectively, with additional technical details and IBR-specific performance criteria. These performance-based factors should be publicly available in an open and transparent manner (e.g., Open Access Same-Time Information System (OASIS)) and help ensure uniform[7] IBR performance both in normal and post-disturbance operations to address the following:

- Expected reactive power control[8] modes and parameters with considerations given to:
  - The type of automatic voltage or reactive power control required for the IBR.

[5] https://www.nerc.com/pa/Stand/Pages/Standards-Under-Development.aspx
[6] One-Stop Shop (Compliance Monitoring & Enforcement Program) (nerc.com)
[7] Some areas of the BPS may need location-specific variances to any uniform set of requirements. These additional or varied requirements are not in conflict with expectations of uniform performance from standardized requirement. For example, standardized voltage control modes may need local alterations to reach expected rise and settling time requirements.
[8] Automatic voltage control, fixed reactive power control, and power factor control, etc.

  - Specific value ranges for parameters like voltage control deadbands, voltage slopes or droops, and reactive power limits, and point of measurement and control for the IBR.

- Expected frequency response control modes and parameters with considerations given to:
  - The expected frequency control behavior.[9]
    - Performance expectation for staged tests, such as those conducted during commissioning, should be differentiated from real-time operational performance expectations. Such real-time expectations include, but are not limited to, performance during frequency events.
  - Specific value ranges for parameters like frequency control deadbands, droops, ramp rate limits, and other settings that may impact the frequency response performance.
- Expected ride-through behaviors[10] during system disturbances with considerations given to:
  - System disturbances and event thresholds for which BPS-connected IBR should ride through.
  - Maximization of ride-through capabilities up to equipment capability.
  - Use of measurement filtering or time delays to prevent erroneous instantaneous trips.
  - Positive and negative sequence current injections and their priority under different ride-through modes.
- Post-disturbance performance requirements, inclusive of settling time requirements, with considerations given to:
  - Active power recovery speed and magnitude.
  - Reactive power injection speed and magnitude.
  - Voltage recovery speed and magnitude.
  - Active/reactive current priority when current limits are reached.
- Reactive power capability requirements within the continuous operation range of system voltage.

[9] This includes frequency control modes (e.g., primary frequency response and fast frequency response, etc.), coordination between frequency response and dispatch commands. See NERC Lesson Learned on frequency response and dispatch commands.
[10] This includes voltage and frequency ride through as well as any other causes of tripping or active power reduction like phase angle jump or direct current (DC) bus protections. See NERC major event reports.

- The requirements should emphasize the full use of reactive power capability.

Essential Action #2: Each TP and PC should enhance their modeling and study practices to ensure sufficient study work and model quality verification are performed and documented to reflect models that are representative of installed, or to-be installed, equipment with the following considerations:

- Model quality and accuracy criteria to ensure models used are accurate representations of the equipment being studied.
  - Request and review IBR unit model validation reports[11] from the GO, who can collaborate with the original equipment manufacturers (OEM) that show the response of positive sequence phasor domain (PSPD) equipment-specific models, electromagnetic transient (EMT) models, and PSPD standard library models against actual measured product responses.
  - Request and review parameter verification reports that show mapping between models and products used. This is necessary to ensure that model configuration reflects how the equipment is configured on-site and that changes made in either the product or model can be accurately translated between the two.
  - Request and review model quality attestations like those detailed in the *NERC EMT Modeling Reliability Guideline.*[12]
- Performance tests and conformity criteria to be used by the GO to show the modeled representation of the IBR meets performance expectations published by the TP and PC and the field performance.
  - Performance testing processes should include sufficient tests necessary to show conformity with published performance expectations without adding undue study burden.
  - Performance tests and expected performance should be publicly posted and readily available to interconnection customers so that more of the design work can be completed before the interconnection process begins.
  - Performance testing process should ensure that model parameters reflect as-built field settings and that model performance matches field performance *before* reaching full commercial operations.

[11] GOs responding to requests for unit model validation reports should obtain these reports from their OEM for the specific technology and product (plant controller and inverter-level) versions as is used or intended to be used at the IBR. These reports typically include benchmarking between model (root mean squared (RMS) and point on-wave quantities) response and actual product response for a variety of small and large signal disturbances. If the manufacturer is no longer in business or the IBR is not supported any longer, validation of a standard library PSPD or EMT model against IBR performance data is recommended.

[12] *NERC EMT Modeling Reliability Guideline*

- Procedures that allow and promote a transparent feedback loop between GOs and applicable entities such that changes to proposed IBR design are captured in the model(s).
  - Changes made to modeled representations should also be tracked and translated into real-world parameters through these procedures.
- Once performance and study enhancements are completed per the above, TOs, TPs, or PCs, where applicable, should:
  - Enhance the existing criteria used throughout generator interconnection through implementing these urged measures.
  - Apply these factors to their local reliability planning processes.

Essential Action #3: TOs, TPs, or PCs, where applicable, should perform a detailed review of currently operating IBRs on their system to understand the extent of condition of both real-world performance and accuracy of their models.

- This can be completed through verifying the performance of existing IBRs and their models, comparing the field performance to model performance against previous criteria or requirements, and making note of opportunities to address and correct identified issues.[13]
  - Confirm any changes made to correct identified issues.
  - Update IBR models to reflect new performance, if there is any change in the field.
  - Communicate any model changes to all affected parties.

Essential Action for GOs:

Essential Action #4: Each GO should create and implement processes to help ensure the models used for the evaluation of their design and submitted to TPs and PCs for use in generator interconnection and planning processes are—to the extent possible based on the available information—accurate and high-fidelity representations of their IBR. This should be accomplished through the following:

- GOs should request unit model validation and model benchmark reports from both their inverter and power plant controller manufacturers that show the following:
  - EMT model performance against measured performance during type testing, including technical explanations for any mismatch.

[13] This Essential Action would require operational data and collaboration between TO, TOP, GO, and equipment manufacturers.

  - EMT model performance against PSPD equipment-specific and PSPD standard library models, including technical explanations for any mismatch.

- GOs should leverage publicly posted performance requirements for their interconnecting area and finalize the control design to minimize changes made throughout the generator interconnection study process.
- GOs should perform a conformity assessment for what is installed and commissioned so that it matches what has been designed and studied. The acceptance criteria of this assessment by GOs should be stricter than the criteria used by TO or PC for measuring performance.
  - Frequency response performance stipulated in operational performance requirements and measured during frequency events should not be used as acceptable criteria when assessing IBR Primary Frequency Response (PFR) performance from staged tests. The applicable criteria should be the performance expectation set by TO, TP and PC for testing PFR during commissioning, as mentioned in Essential Action #1.
- GOs should use models that allow for parameters in the model space to be easily translated into actual product parameters. This makes it easier to track IBR equipment and corresponding IBR models.
- GOs should enhance change management processes to ensure any changes, including firmware changes, made to the actual IBR or the IBR model are reflected in both the equipment and the model representing the equipment. GOs should communicate such changes to TPs and PCs. Representative models are critical for BPS reliability as all study work relies on accurate inputs. GOs should perform this verification *before* they implement the changes in the field.
- GOs should enhance change management processes to track any firmware changes within the IBR and ensure unintended changes, such as control parameters being reset to factory default values, do not occur following firmware changes.
- GOs should organize and retain critical IBR information, so that it is readily available. This information should be periodically reviewed for accuracy. This information should be kept up to date, as part of enhanced change management processes. Critical IBR information is, at a minimum, the list of information requested in the Level 2 Alert[14] regarding IBR Model Deficiencies, which are summarized below:
  - Inverter or turbine make, model, and firmware versions.

[14] *Industry Recommendation: Inverter-Based Resource Model Quality Deficiencies*

- Inverter or turbine active and reactive power capabilities.
- Inverter or turbine voltage and frequency ride-through capabilities.
- Inverter or turbine voltage and frequency protection settings.
- Plant controller make, model, and firmware versions.
- Plant-level active and reactive power capabilities.
- Plant-level voltage and frequency protection settings.
- Plant-level control modes and associated parameters.
- Plant- and inverter-level control descriptions.[15]

- GOs should consider adding these model requirements and model support throughout the lifecycle of the facility to their agreements with the equipment manufacturers and entities involved in the creation of the IBR model.

Reporting Instructions:	Initial acknowledgment of receipt is required by XXXX XX, XXXX, Midnight Eastern via the NERC Alert System. Responses to the questions below are required to be submitted via the NERC Alert System by XXXX XX, XXXX, 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 GO, TP, and PC 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.*** **TO Questions**

[15] e.g., plant-level controls hierarchy, voltage control strategy, theory of operation

1) Do you have publicly posted generator interconnection requirements or other policies, criteria, protocols, or guidance in alignment with Essential Action #1?
   A. Yes
   B. No
   C. Not Applicable: This entity is not registered as a TO.
2) If "No" to Question 1, when do you plan to implement these enhancements to align with Essential Action #1?
   A. 2025
   B. 2026
   C. 2027
   D. No Plans to Update
   E. Not Applicable: This entity is not registered as a TO.
3) In the free text box below, please summarize any additional details or narratives that may clarify your answers. Please note that a response to this question is NOT REQUIRED, but strongly encouraged to help inform future assessment and mitigation efforts. Please enter "NA" if no further information is provided or you are not registered as a TO.

TP and PC Questions

4) Do you have publicly posted planning requirements or other policies, criteria, protocols, or guidance in alignment with Essential Action #1?
   A. Yes
   B. No
   C. Not Applicable: This entity is not registered as a TP or a PC.
5) If "No" to Question 3, when do you plan to implement these changes to align with Essential Action #1?
   A. 2025
   B. 2026
   C. 2027
   D. No Plans to Update
   E. Not Applicable: This entity is not registered as a TP or a PC.
6) Do you have modeling practices and study processes in alignment with Essential Action #2?
   A. Yes

B. No

C. Not Applicable: This entity is not registered as a TP or a PC.

7) If "No" to Question 6, when do you plan to make the recommended enhancements to align with Essential Action #2?

A. 2025

B. 2026

C. 2027

D. No Plans to Update

E. Not Applicable: This entity is not registered as a TP or a PC.

8) In the free text box below, please summarize any additional details or narratives that may clarify your answers. Please note that a response to this question is NOT REQUIRED, but strongly encouraged to help inform future assessment and mitigation efforts. Please enter "NA" if no further information is provided or you are not registered as a TP or PC.

GO Questions

9) Do you currently have internal processes that align with the details in Essential Action #4?

A. Yes

B. No

C. I do not own any IBR or am not registered as a GO.

10) If "No" to Question 7, when do you plan to implement these changes to align with the details in Essential Action #4?

A. 2025

B. 2026

C. 2027

D. No Plans to Update

E. I do not own any IBR or am not registered as a GO.

11) Do you have internal processes to accurately confirm the actual dynamic performance of the plant following events on the system compared to the IBR model?

A. Yes

B. No

12) Do you have internal processes to update and inform applicable transmission entities when changes are made to the IBR that can alter the IBR's performance?

A. Yes

B. No

13) In the free text box below, please summarize any additional details or narratives that may clarify your answers. Please note that a response to this question is NOT REQUIRED, but strongly encouraged to help inform future assessment and mitigation efforts. Please enter "NA" if no further information is provided or you are not registered as a GO.

Additional Information:

On the North American BPS, both the frequency and magnitude of major, IBR-related disturbances have been increasing significantly since 2016. These major disturbances have been observed in areas with large penetrations of IBR. NERC expects that if the systemic deficiencies with IBR performance and modeling are not mitigated, this trend will continue to grow in proportion with IBR penetration.

The following links provide additional information on previous major events, NERC IBR activities, and best practices:

- *Level 2 Industry Recommendation: Inverter-Based Resource Performance Issues*
- *Inverter-Based Resource Performance Issues Public Report*
- *Level 2 Industry Recommendation: Inverter-Based Resource Model Quality Deficiencies*
- *Inverter-Based Resource Model Quality Deficiencies Public Report*
- *Blue Cut Fire Disturbance Report*
- *Canyon II Fire Disturbance Report*
- *Angeles Forest and Palmdale Roost Disturbance Report*
- *San Fernando Disturbance Report*
- *Odessa 2021 Disturbance Report*
- *Victorville, Tumbleweed, Windhub, and Lytle Creek Fire Disturbance Report*
- *Texas Panhandle Wind Disturbance Report*
- *Odessa 2022 Disturbance Report*
- *Southwest Utah Disturbance Report*

- *California Battery Energy Storage System Disturbances Report*
- *NERC Dynamic Modeling Recommendations*
- *NERC IBR Strategy*
- *NERC EMT Modeling Guideline*

Contact:	For clarification or content-related questions, contact: Aung Thant Aung.Thant@nerc.net For login/account/registration issues, contact: Bulk Power System Awareness Group nerc.alert@nerc.net

North American Electric Reliability Corporation
3353 Peachtree Road NE
Suite 600 – North Tower
Atlanta, GA 30326
www.nerc.com

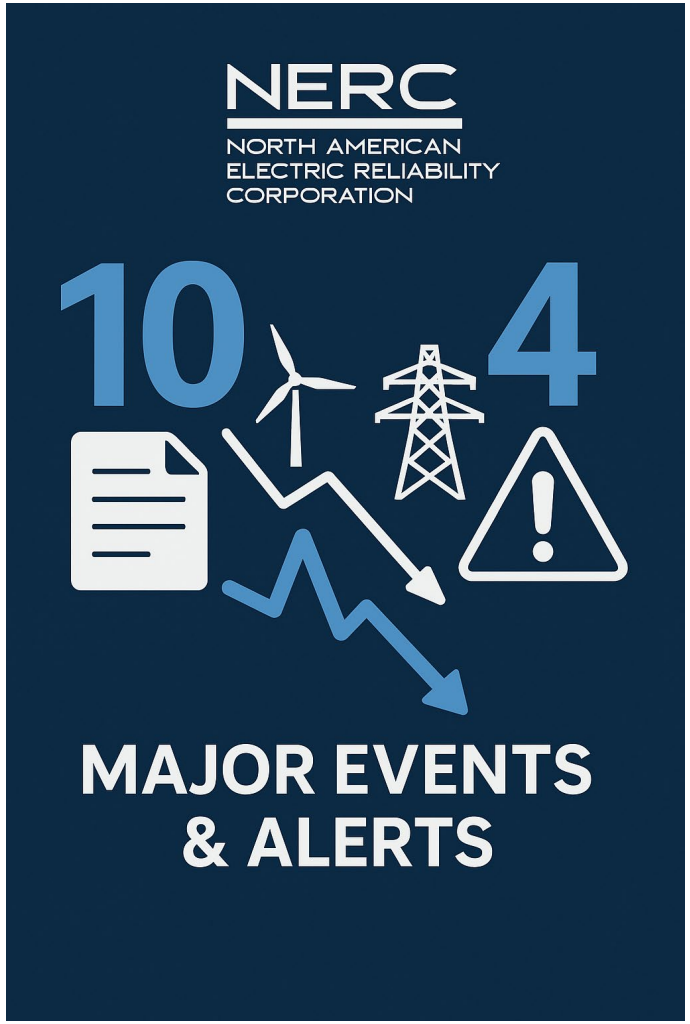
NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Level 3 Alert Essential Actions to Industry

Inverter-Based Resource Performance and Modeling

Darrell Moore, Director, Reliability Risk Management, NERC
Latrice Harkness, Director, Engineering, NERC
Board Of Trustees Open Meeting
May 8, 2025

Level 3 Alert Essential Actions to Industry

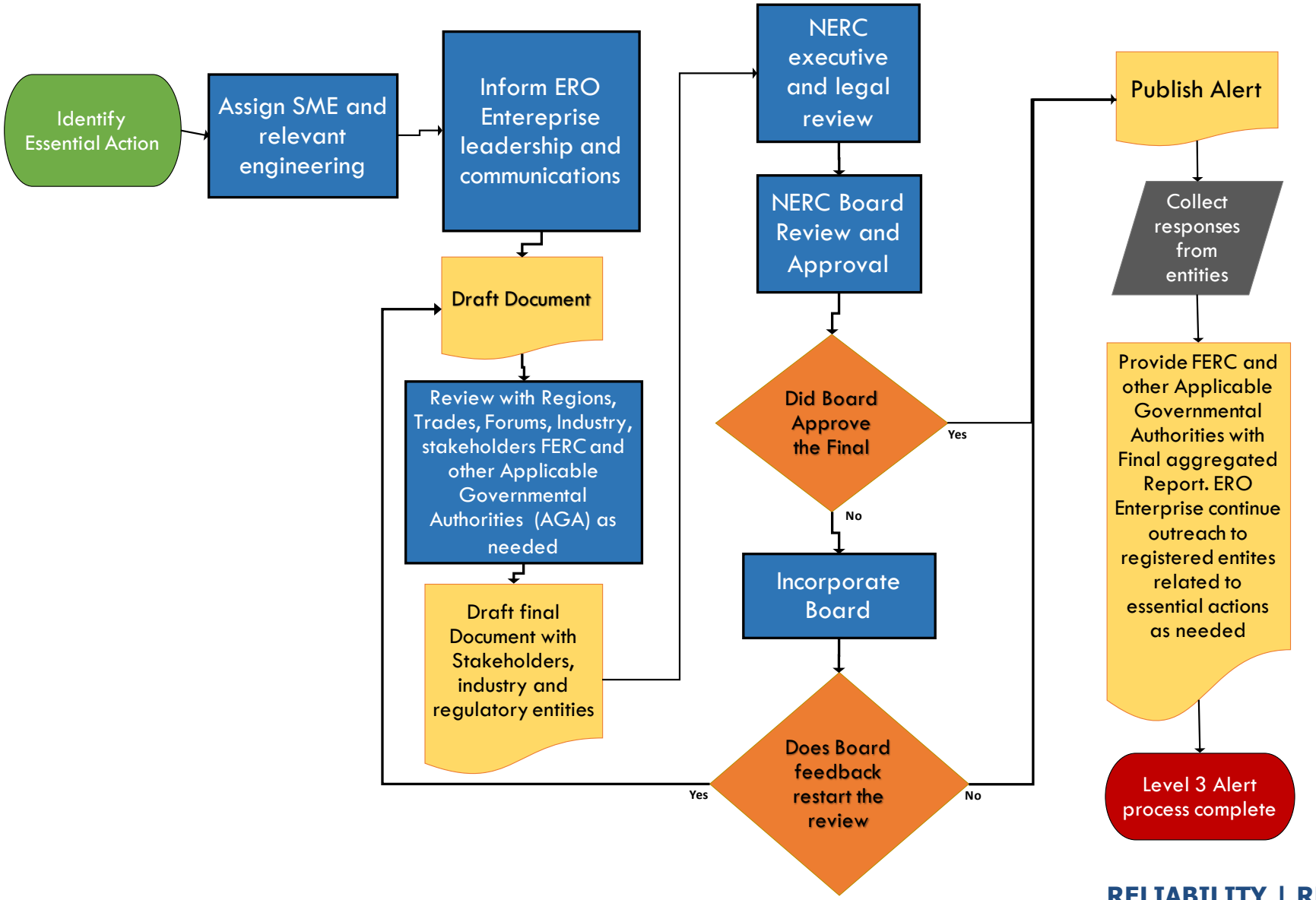


Since 2016, NERC has analyzed numerous major events totaling more than 15,000 MW of unexpected generation reduction. These major events were not predicted through current planning processes.

In response to these disturbances, NERC has issued 10 major event reports and four Level 2 Alerts.

Given the continuing impacts to reliability, the ERO Enterprise has determined the highest-level NERC Alert: A level 3 alert Essential Actions to industry is required. To enhance technical minimum requirements and study processes to mitigate risks posed by IBR performance during system disturbances.

High Level Alert Level 3 Flow Diagram



Essential Actions Level 3 Alert

Essential Actions:

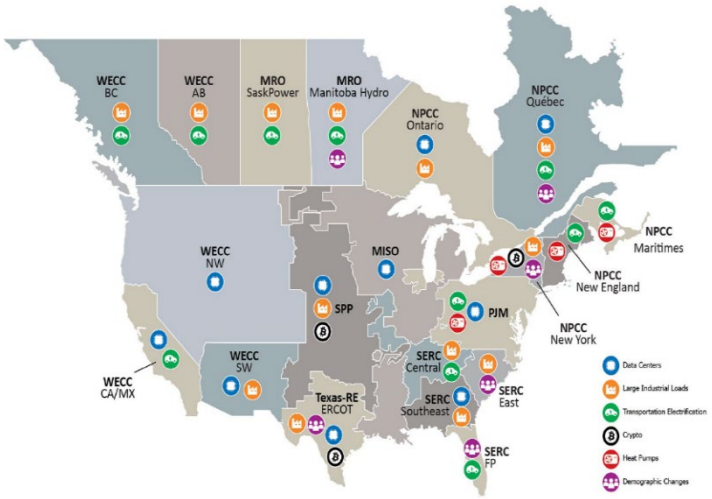
Essential Actions are specific actions that NERC has determined to be essential for certain segments of owners, operators, or users of the BPS to undertake to ensure the Reliable operation of the BPS.	Under the ROP Board approval is required prior to issuance of a Level 3 Alert Essential Actions to industry.	NERC Management is seeking Board Approval to issue the Level 3 Alert Essential Actions to Industry Inverter-Based Resource Performance and Modeling

Questions and Answers

NERC Action Plan on Large Loads Integration

Action
Update

Background
Increasing amounts of large commercial and industrial loads are connecting rapidly to the bulk power system (BPS). Serving this asynchronous, inverter-based demand is vital for the North American economy. At the same time, it is critical that these new loads are integrated in a way that supports the reliable operation of the BPS, rather than reducing the grid's performance. In doing so, more demand can be added, assuming that energy production is available or can be built on time.



Emerging large loads such as data centers (including crypto and artificial intelligence), hydrogen fuel plants, etc. present unique challenges to forecast and plan for increased demand (See Figure above from 2024 Long-term Reliability Assessment). In addition, recent off-nominal occurrences in both Texas and Virginia have illustrated the current challenge to integrate large inverter-based loads. After the grid experiences a fault, large amounts of demand can leave the system (engaging their back-up power supply plants). This reduction of demand exacerbated the impacts of this system fault on the bulk power system, creating imbalances in energy, frequency, and voltage, and potentially setting the stage for cascading, uncontrolled islanding and instability.

To begin understanding large loads, and address best ways for their integration, in August of 2024, NERC's Reliability and Security Technical Committee (RSTC) established a Large Loads Task Force or LLTF (See current Scope and Work Plan).

Recently, at NERC's February 2025 Board meeting, two informational gathering methods were used to understand reliability considerations towards integrating these large loads: Member Representatives Committee provided written input, and a technical panel session was held. The Board resolved that NERC staff should forward at their next meeting with an Action Plan to address integration of large loads, leveraging the results of the LLTF as well as reflecting on the MRC input and the technical panel session discussion.

Summary
Action Plan
The pace at which large loads are interconnecting to the BPS is exacerbating the existing resource and energy adequacy challenges that NERC continues to highlight in its long-term reliability assessments. Actions to address these resource and energy adequacy and reliability challenges will continue to be addressed by NERC's broad reliability mitigation efforts.

NERC recommends enhancing the existing Large Loads Task Force with two additional efforts: collaborative industry sessions and large loads registration analysis. In addition, several complementary activities are noted as well.

LLTF Task Force

Several stakeholders highlighted that the LLTF is critical to understanding and addressing the risks of large loads to the grid. The output of the LLTF will be essential in setting the stage for appropriate risk mitigation efforts. Based on the LLTF current Work Plan, three deliverables are being undertaken.

- The first deliverable, will be a white paper, focusing on the Characteristics and Risks from Emerging Loads. This white paper is expected in the second quarter of 2025.
- The second deliverable will be an Assessment of Gaps in Existing Practices, Requirements, and Reliability Standards for Emerging Large Loads. This white paper is currently due in the fourth quarter of 2025.
- Final deliverable will be a Reliability Guideline on Risk Mitigation for Emerging Large Loads expected by the second quarter of 2026, while contemplating any other mitigation tools (e.g. Reliability Standards, Alerts, etc.).

Stakeholders generally agreed that the LLTF is a critical foundational element to understand the risk associated with large loads. Some stakeholders suggested accelerating its schedule and deliverables. Though it is possible to accelerate the schedule, NERC will consider it only if it can be done in a manner that does not sacrifice the quality needed to ensure the technical rigor required to support future actions, such as Reliability Standard development activities.

Collaborative Industry Sessions

One of the key items identified during the technical panel session was the need for increased collaboration between the electric and large load industries. Thus, in addition to the LLTF, the proposed action plan is recommending a coordinated series of collaborative, and transparent meetings and workshops, focused on building a reliability community between targeted large load, Load Serving entities, and bulk power system owners, users, and operators. The pace of these meetings would accommodate the LLTF deliverables but also focus on the managerial levels of the Large Load and LSE community. Therefore, meetings would he high level efforts, while others can be more focused on the engineering level. High level meeting topics would include at a minimum:

1. Who is NERC and why is NERC important to the future of the Large Load industry?
    a. What does it mean and the obligations to be part of/user of the bulk power system?
    b. How does NERC quantify BPS risks and identify risk mitigation strategies
    c. What are the characteristics and risk that need to be mitigated to increase the amount of Large Loads that can be served?
2. How can the electric and the large loads industries collaborate on the needed changes to address and mitigate risks identified by the LLTF?
    a. What are the planning timeframe requirements?
    b. What are the operational planning and operational timeframe requirements?

3. What are the gaps in existing industry and large load practices, requirements, and Reliability Standards needed to assure the reliable operation of both the bulk power system and large loads?
    a. What guidance should be provided for both industries?
    b. What Reliability Standards Development will be needed?

NERC will organize these meetings with a panel session approach or workshop depending on the desired outcomes. The activities will emphasize the ongoing activities that the industry is working towards on the LLTF. The LLTF will enhance the roster with additional members if needed to ensure sufficient representation towards franchising both industries in the results of the LLTF.

Registration Analysis

While the work to strengthen the community and develop technical background is being done, NERC recommends conducting legal and other analysis to determine how large loads can be registered into the NERC ecosystem and to prepare the groundwork to support engagement:

1. Legal basis for registration of these large users of the bulk power system
2. Should Load Serving Entities be held accountable for large load performance, or should large loads be registered directly with NERC.
3. NERC's ability to write Reliability Standards that Large Loads or LSEs would be required to follow
4. Review of the Procedures and Processes that need enhancement to accommodate LSEs and large loads.

This registration analysis will need to accommodate the ongoing activities with the Board's Modernize Standards Process and Procedures Task Force (MSPP), and NERC's ballot pool review.

Complementary Activities

In addition to the two additional main efforts (Collaborative Industry Sessions and Registration Analysis), NERC envisions several complementary activities that support the Large Loads Work Plan as well as other activities.

Key complementary activities include:

- Load Modeling Working Group (LMWG) - The Load Modeling Working Group was organized by the RSTC to drive the advancement and use of dynamic load modeling on an interconnection-wide basis. The LMWG will address current issues related to available dynamic load models, develop load model data sets and guidelines for load modeling practices, and provide guidance on future developments of dynamic load modeling capability across North America. Current deliverables are expected to be:
    - Assess Possible Refinements to Data Center Modeling Data / ongoing since 3rd Quarter 2024
    - Explore NERC Role in Acquisition of Large Load Data Focusing on Center Data / ongoing since 3rd Quarter 2024

- Consider a SAR for Registering Large Loads for the purpose of Data collection and modeling / 4th Quarter 2025[1]
- Data Center Load Modeling / 2nd Quarter 2026
- Load Modeling and Technical Reference Update and Refinement / 4th Quarter 2025

Within the deliverables, it is expected that the LMWG will focus on developing modeling tools and guidelines that will help the industry in better understanding the characteristics of these large loads. Also, as part of the Large Loads Work Plan, NERC will ensure that the learnings from the LWMG are reflected in its efforts. Finally, NERC will also consider ways to advance the deliverables without sacrificing quality.

- Coordination with Other Efforts – NERC has and will continue to collaborate and engage in other complementary efforts such as those from Energy Systems Integration Group (ESIG), ERCOT, EPRI, and others.
- Engagement & Outreach – NERC has focused on expanding its engagement with the Large Loads industry through direct outreach to key trades as well as large load companies directly. The trade associations are invited to NERC's quarterly Trades & Forum meeting and NERC expects the topic of large loads to be featured recurrently in those meetings. NERC will also seek opportunities to join meetings with members to continue to share the importance of reliability and security to the large load community.
- Communications Updates – Several stakeholders recommended considering additional updates to keep industry updated on progress. Given the LLTF will have several deliverables that will serve as updates, NERC will consider complementing those updates in those quarters where no LLTF deliverable is due (i.e., third quarter of 2025 and first quarter of 2026).
- Review of PRC-006-5 Automatic Underfrequency Load Shedding Standard – A few stakeholders highlighted elements of concern relevant to the PRC-006-5 standard. NERC will engage with the stakeholders that raised questions and will channel comments on existing processes that exist to review potential changes to existing standards.
- Additional Incident Analysis and Lessons Learned – NERC and the ERO will continue to monitor large load integration through its existing situational awareness tools, and event analysis. As new incidents are identified and evaluated, NERC will continue to look for opportunities to provide lessons learned to the industry through incident analysis or other similar tools.

Timeline

NERC expects its initial efforts on Large Loads that are included in this Work Plan to conclude by the time of the final deliverable of the LLTF, which is currently scheduled for the second quarter of 2026. At that time, and based on the LLTF recommendations, NERC will update this Work Plan.

[1] As the LMWG is organized under the RSTC, the SAR development process will govern development of this SAR starting at this date. The RSTC SAR development process is available at the RSTC website here: https://www.nerc.com/comm/RSTC/Pages/default.aspx

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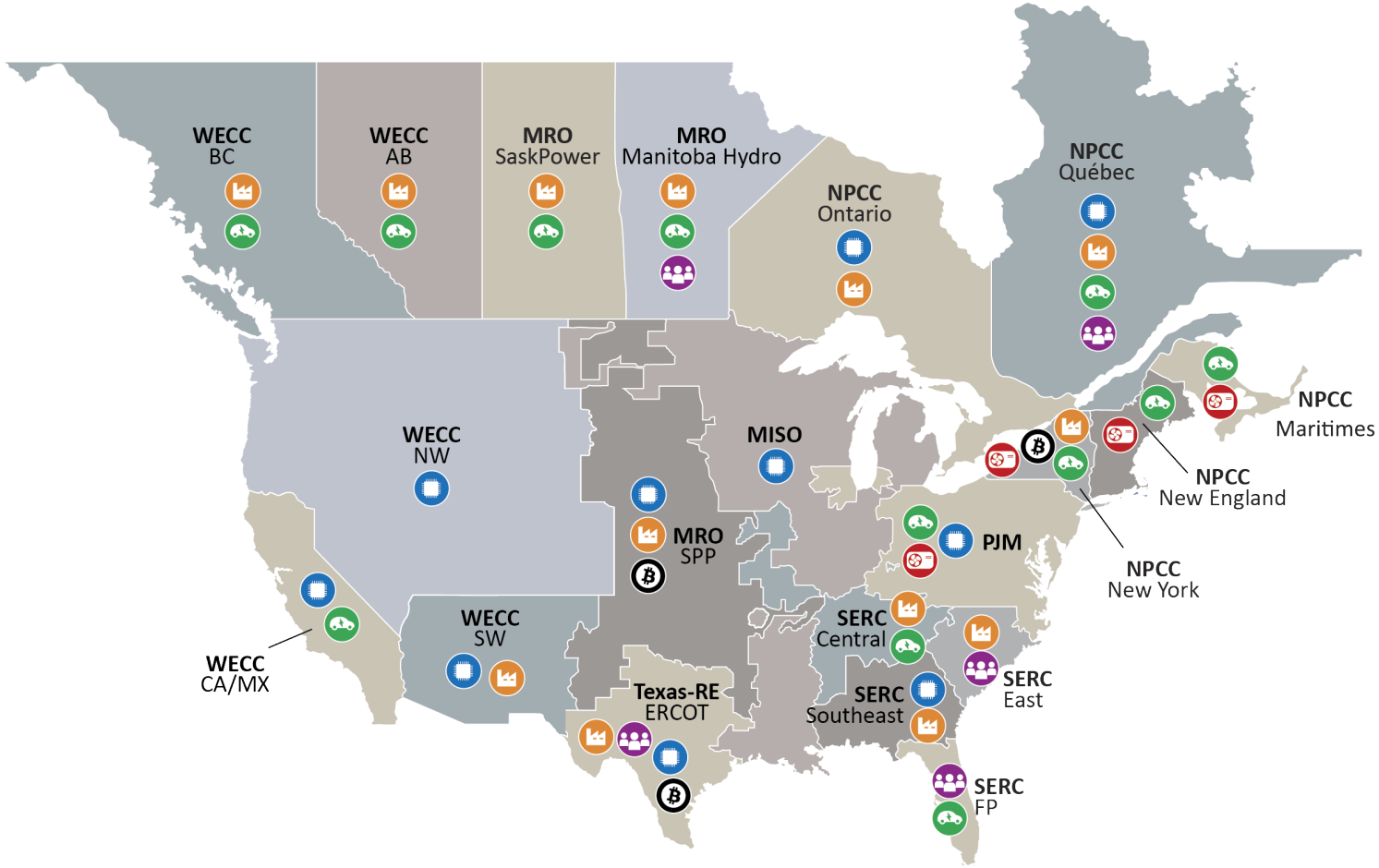
Action Plan: Reliability Impacts from Large Load Integration

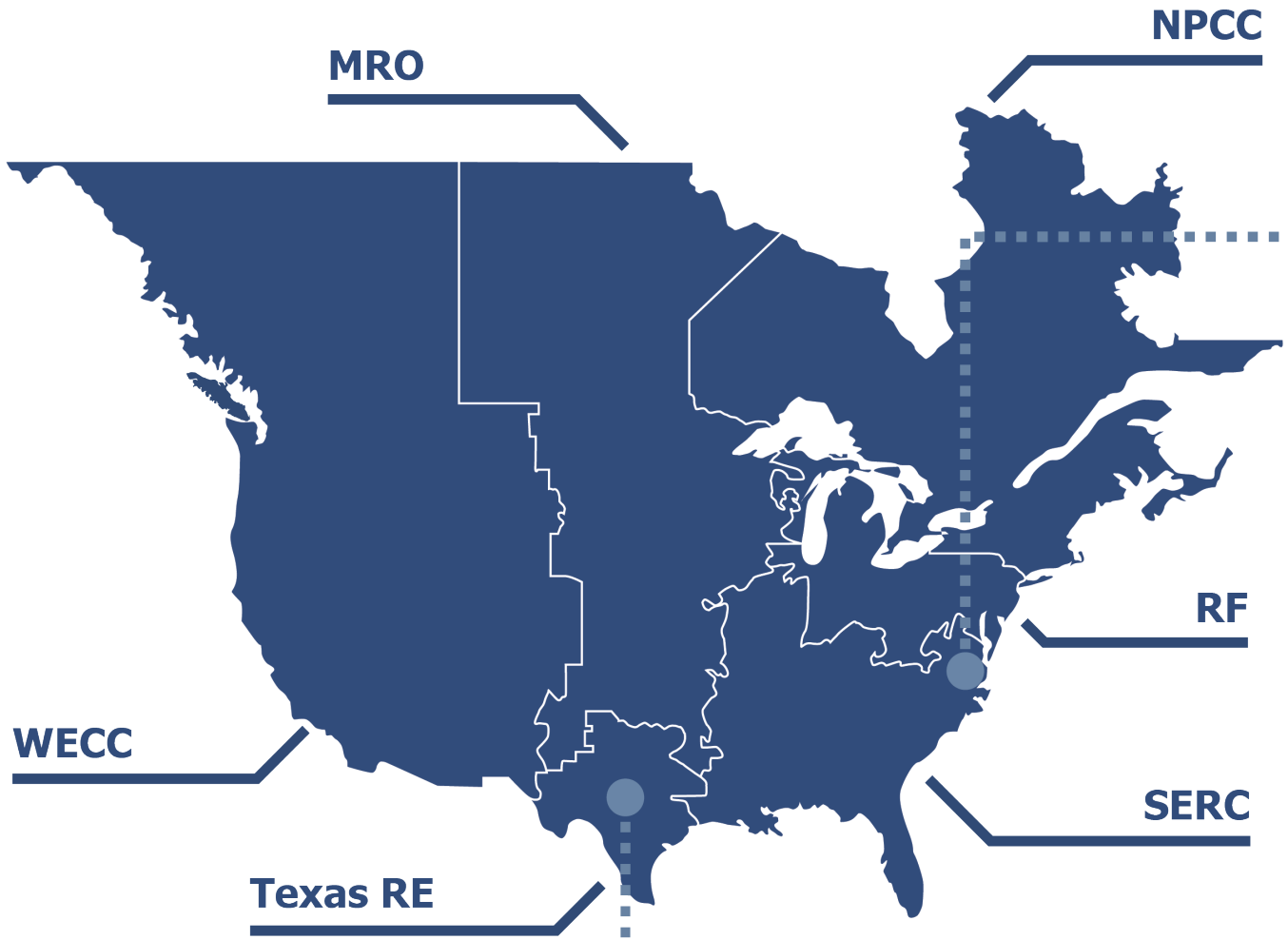
Mark Lauby, Senior Vice President and Chief Engineer
Board of Trustees Open Meeting
May 8, 2025

Primary Demand Drivers by Assessment Area



- DATA CENTERS
- LARGE INDUSTRIAL LOADS
- TRANSPORTATION ELECTRIFICATION
- CRYPTO
- HEAT PUMPS
- DEMOGRAPHIC CHANGES

Voltage Sensitive Load Loss Events



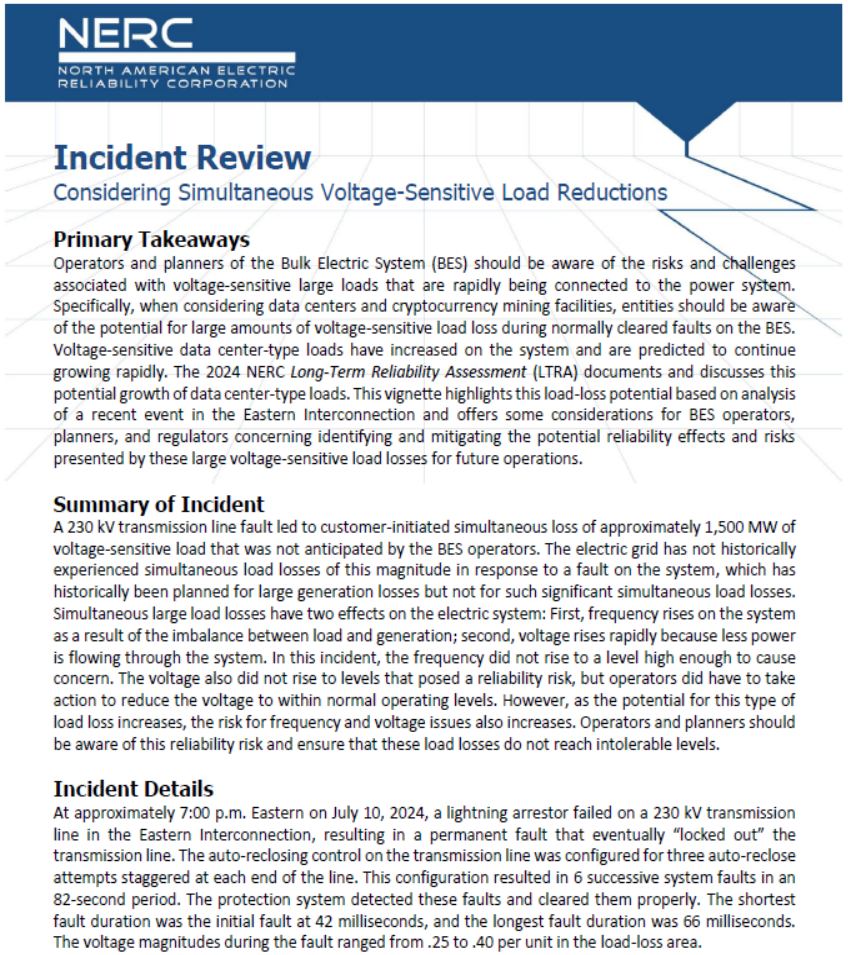
EI Data Center Load Loss Events

- 1500 MW Load Loss (July 2024)
- 1800 MW Load Loss (February 2025)

ERCOT Crypto Mining Load Loss Events

- 25 Loss Events (November 2023–January 2025)
- 100–400 MW Load Loss

Data Center Load Loss Event



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Incident Review

Considering Simultaneous Voltage-Sensitive Load Reductions

Primary Takeaways

Operators and planners of the Bulk Electric System (BES) should be aware of the risks and challenges associated with voltage-sensitive large loads that are rapidly being connected to the power system. Specifically, when considering data centers and cryptocurrency mining facilities, entities should be aware of the potential for large amounts of voltage-sensitive load loss during normally cleared faults on the BES. Voltage-sensitive data center-type loads have increased on the system and are predicted to continue growing rapidly. The 2024 NERC *Long-Term Reliability Assessment* (LTRA) documents and discusses this potential growth of data center-type loads. This vignette highlights this load-loss potential based on analysis of a recent event in the Eastern Interconnection and offers some considerations for BES operators, planners, and regulators concerning identifying and mitigating the potential reliability effects and risks presented by these large voltage-sensitive load losses for future operations.

Summary of Incident

A 230 kV transmission line fault led to customer-initiated simultaneous loss of approximately 1,500 MW of voltage-sensitive load that was not anticipated by the BES operators. The electric grid has not historically experienced simultaneous load losses of this magnitude in response to a fault on the system, which has historically been planned for large generation losses but not for such significant simultaneous load losses. Simultaneous large load losses have two effects on the electric system: First, frequency rises on the system as a result of the imbalance between load and generation; second, voltage rises rapidly because less power is flowing through the system. In this incident, the frequency did not rise to a level high enough to cause concern. The voltage also did not rise to levels that posed a reliability risk, but operators did have to take action to reduce the voltage to within normal operating levels. However, as the potential for this type of load loss increases, the risk for frequency and voltage issues also increases. Operators and planners should be aware of this reliability risk and ensure that these load losses do not reach intolerable levels.

Incident Details

At approximately 7:00 p.m. Eastern on July 10, 2024, a lightning arrestor failed on a 230 kV transmission line in the Eastern Interconnection, resulting in a permanent fault that eventually "locked out" the transmission line. The auto-reclosing control on the transmission line was configured for three auto-reclose attempts staggered at each end of the line. This configuration resulted in 6 successive system faults in an 82-second period. The protection system detected these faults and cleared them properly. The shortest fault duration was the initial fault at 42 milliseconds, and the longest fault duration was 66 milliseconds. The voltage magnitudes during the fault ranged from .25 to .40 per unit in the load-loss area.

RELIABILITY | RESILIENCE | SECURITY

EVENT:

- 1,500 MW Load Loss (exclusively data center load)
- Coincident with 230 kV normal line fault clearing
- Widespread: 60 different load points, 25 substations

CONCLUSIONS:

- Require models for large loads to determine Bulk Electric System risk from coincident large load losses
- Assess need for new or modified standards and if large loads should be registered with NERC

Large Load Task Force Framework to Address Reliability and Security Risks

Risk Identification, Validation, and Prioritization

White Paper (Q2 2025):
Characteristics and Risks of Emerging Large Loads

Gap Analysis

White Paper (Q3 2025):
Assessment of Gaps in Existing Practices, Requirements, and Reliability Standards for Emerging Large Loads

Risk Mitigation

Reliability Guideline (Q1 2026):
Risk Mitigation for Emerging Large Loads

Standard Authorization Request(s):
Update Reliability Standards as needed

Draft LLTF First White Paper: Prioritization of Risks

HIGH

Long-Term Planning
- Resource Adequacy

Operations/Balancing
- Balancing and Reserves

Resilience
- Automatic UFLS Programs

Stability
- Dynamic Modeling
- Frequency Stability
- Oscillations
- Ride-through
- Voltage Stability

MEDIUM

Long-Term Planning
- Demand Forecasting
- Transmission Adequacy

Operations/Balancing
- Lack of Real-Time Coordination
- Short-Term Demand Forecasting

Resilience
- Load-Shed Obligation Impacts

LOW

Power Quality
- Harmonics
- Voltage Fluctuations

Resilience
- System Restoration

Security Risks
- Cyber Security

Draft LLTF First White Paper: Characteristics and Risks of Emerging Large Loads

Recommendations for Large Load Task Force (#1-3)

- Standard Gap Identification
- Risk Mitigation
- Characteristic Definition and Categorization

Recommendations for Reliability Security Technical Committee (RSTC) Working Groups (#4-6)

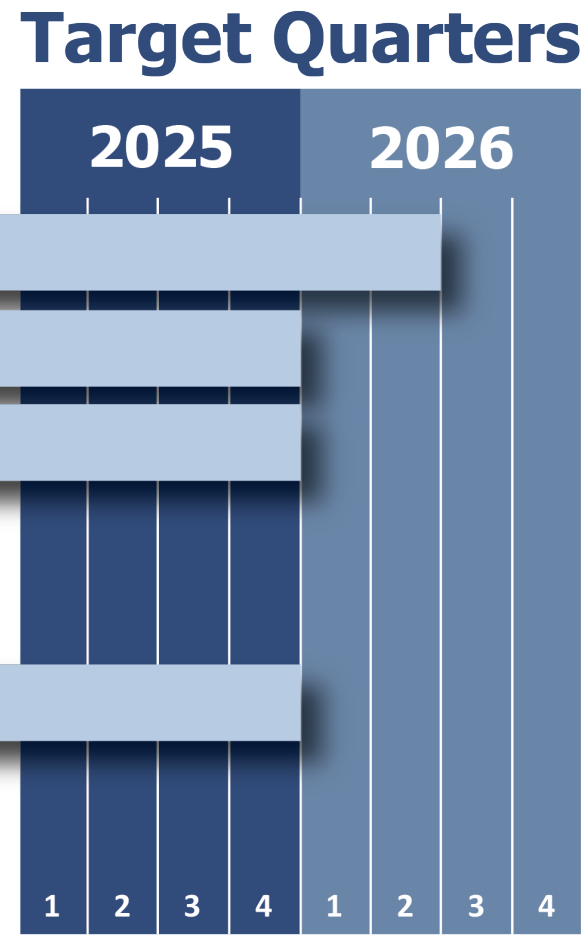
- Model Development and Refinement for Large Loads
- Develop Approaches to Differentiate Computation Facilities
- Assess Possible Protection System Impacts

Recommendation to Utilities (#7)

- Industry must collect data to understand the unique risks associated with connecting a large load.

NERC Draft Action Plan: Large Loads

TASK DESCRIPTION



Reliability Security Technical Committee's Large Load Task Force (LLTF)

NERC-led Collaborative Industry Sessions

Registration Analysis

- Legal basis for registration of large users of the bulk power system
- Consider if Load-Serving Entities (LSE) are accountable for large load performance
- Ability to write Reliability Standards that Large Loads or LSEs would follow

Complementary Activities

- Load Modeling Working Group
- Coordination with EPRI, ESIG, and Large Load Industry Groups
- Industry Communications and Outreach
- Continued Incident Analysis and Lessons Learned

Questions and Answers