NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Agenda
Board of Trustees Meeting

October 8, 2024 | 11:30 a.m.-12:00 p.m. Eastern
Hybrid Meeting

In-Person *(Board and NERC Staff ONLY)*

Barnsley Resort
597 Barnsley Gardens Rd NW
Adairsville, GA 30103

Virtual Attendees *(Observers)*
Webinar Link: Join Link
Attendee Password: Board10824ATT (26273109 from phones)
Audio Only: +1-415-655-0002 US Toll | Access code: 2318 123 3973

Introduction and Chair's Remarks

NERC Antitrust Compliance Guidelines

Agenda Items

1. **Consent Agenda*** - **Approve**
   a. Minutes
      i. August 15, 2024 Open Meeting
   b. Reliability and Security Technical Committee Proposed Charter Amendments
2. **Standards*** - **Adopt**
   a. Project 2020-06 Verifications of Models and Data Generators (IBR Definition)
   b. Project 2020-02 Modifications to PRC-024 (Generator Ride-through)
   c. Project 2021-04 Modifications to PRC-002-2
   d. Project 2023-02 Analysis amd Mitigation of BES Inverter-Based Resource Performance Issues
3. **Other Matters and Adjournment**

*Background materials included.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Draft Minutes
Board of Trustees

August 15, 2024 | 11:00 a.m. – 2:00 p.m. Pacific

Hyatt Regency Vancouver
655 Burrard St.
Vancouver, BC V6C 2R7, Canada

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 August 15, 2024, at approximately 11:00 a.m. Pacific, 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
Jane Allen
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, Assistant Corporate Secretary
Manny Cancel, Senior Vice President and Chief Executive Officer of the E-ISAC
Erika Chanzes, Director, Business Planning
Mathew Duncan, Vice President, E-ISAC Security Operations and Intelligence
Howard Gugel, Vice President, Regulatory Oversight
Kelly Hanson, Senior Vice President and Chief Operating Officer
Fritz Hirst, Vice President, Government Affairs
Soo Jin Kim, Vice President, Engineering and Standards
Mark G. Lauby, Senior Vice President and Chief Engineer
Lauren Perotti, Assistant General Counsel
Sônia Rocha, Senior Vice President, General Counsel, and Corporate Secretary
Liz Saunders, Vice President, People and Culture
Camilo Serna, Senior Vice President, Strategy and External Engagement
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, including Mr. Francis Bradley of Electricity Canada, Mr. Chris O'Riley of BC Hydro, Ms. Patricia Hoffman of the United States Department of Energy, and Mr. Derek Olmstead, CAMPUT Representative to NERC. He remarked on the successful meetings and discussions of the previous days.

Consent Agenda

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

Minutes

The draft minutes for the May 9, 2024 meeting were approved as presented to the Board at this meeting.

Committee Membership

Personnel Certification Governance Committee

RESOLVED, that the Board hereby appoints the following individuals to the Personnel Certification Governance Committee, each for a two-year term ending December 31, 2026:

- Cory Danson, Western Area Power Administration
- Mark Thomas, Entergy
- Steve Rainwater, Electric Reliability Council of Texas
- Marty Sas, SERC Reliability Corporation
- Mario Kiresich, Southern California Edison

Reliability and Security Technical Committee Membership

RESOLVED, that the Board hereby appoints Cezar Panait, Minnesota Public Utilities Commission, to complete a term for an At Large seat ending January 31, 2025.

Governance Documents Amendments

Compliance and Certification Committee Procedures

RESOLVED, that the Board hereby approves the revised Compliance and Certification Committee ("CCC") procedure document CCCPP-001-4, Monitoring Program for NERC's Adherence to NERC's Rules of Procedure, substantially in the form presented to the Board at this meeting.

BE IT FURTHER RESOLVED, that the Board hereby approves the retirement of CCC procedure documents CCCPP-003-3 – Monitoring Program for NERC's Reliability Standards Development Procedure and CCCPP-007-4, Monitoring Program for NERC's Adherence to NERC's Rules of Procedure for Registration and Certification, as presented to the Board at this meeting.

BE IT FURTHER RESOLVED, that the Board hereby approves the revised CCC procedure document CCCPP-013-4, CCC Procedure for the Selection of Members to the NERC Compliance and Certification Committee, substantially in the form presented to the Board at this meeting.

Proposed NERC Bylaws Amendments

WHEREAS, the Member Representatives Committee ("MRC") approved the amended NERC Bylaws at its August 15, 2024 meeting;

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby approves the NERC Bylaws, substantially in the form presented to the Board at this meeting.

BE IT FURTHER RESOLVED, that NERC management is hereby authorized to make the appropriate filings with applicable regulatory authorities and take such further actions and make such further filings as are necessary and appropriate to effectuate the intent of the foregoing resolution.

Proposed SERC Bylaws Amendments

RESOLVED, that the Board hereby approves the amended Bylaws of SERC Reliability Corporation, 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.

Revisions to Appendix 4E of the NERC Rules of Procedure

RESOLVED, that the Board hereby approves the revisions to Appendix 4E of the NERC Rules of Procedure, consisting of revised CCC Hearing Procedures CCCPP-004-3–NERC Compliance and Certification Committee Hearing Procedures, CCCPP-005-2–NERC Compliance and Certification Committee Hearing Procedures for Use in Appeals of Certification Matters, and CCCPP-006-3–NERC Compliance and Certification Committee Mediation Procedures, 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 Francis Bradley, President and CEO, Electricity Canada

Mr. Robb introduced Mr. Bradley of Electricity Canada. Mr. Francis remarked on the importance of NERC's reliability mission. He highlighted the value of NERC's reliability assessments in understanding the risks of extreme weather and the impacts of the evolving grid. Mr. Bradley also remarked on the importance of continued cross border collaboration.

Remarks by Chris O'Riley, President and CEO, BC Hydro

Mr. Robb introduced Mr. O'Riley of BC Hydro. Mr. O'Riley welcomed the participants to Vancouver. He remarked on the BC Hydro system, highlighting planned investments to meet future demands and how BC Hydro has managed drought conditions in recent years. Mr. O'Riley also remarked on BC Hydro's commitment to its Reliability Standards compliance framework.

Remarks by Patricia Hoffman, Principal Deputy Assistant Secretary, Office of Electricity, DOE
Mr. DeFontes introduced Ms. Hoffman of the Department of Energy. Ms. Hoffman remarked on recent DOE activities, including investments in resiliency, transmission facilitation, state resiliency, and siting and permitting efforts to drive improvements in reliability.

Remarks by Derek Olmstead, President and CEO Alberta MSA, CAMPUT Representative
Mr. DeFontes introduced Mr. Olmstead, CAMPUT Representative to NERC. Mr. Olmstead remarked on NERC's ongoing efforts to engage with Canadian regulators, highlighting NERC's participation at the next CAMPUT in-person meeting to discuss Reliability Standards adoption in the Canadian provinces.

President's Report
Mr. Robb provided the president's report. He opened his remarks by reflecting on the interconnected nature of the North American Bulk-Power System and the importance of cross-border collaboration in ensuring a reliable and secure grid.

Mr. Robb remarked on the Committee meetings the previous day, noting the action at the Regulatory Oversight Committee to recommend the Board initiate Rules of Procedure Section 321 to address FERC Order No. 901 directives for a generator grid disturbance ride through standard for inverter-based resources. Mr. Robb underscored the importance of addressing the reliability risks that prompted FERC to issue those directives. He also remarked on the support for NERC's 2025 business plan and budget to fund its reliability mission, and he noted successes under NERC's people and culture initiatives.

Mr. Robb reported on several NERC activities, including two executive searches that are underway to replace Mr. Cancel and Mr. Hoptroff, who are retiring from NERC in early 2025, and an effort to modernize the public facing nerc.com website to provide an enhanced experience for users. He thanked the leadership of the Member Representatives Committee and the standing committees for their participation on NERC's website modernization effort. Mr. Robb concluded the president's report by recognizing Michael Desselle on his forthcoming retirement from the North American Energy Standards Board (NAESB), thanking him for his 22 years of service as NAESB's liaison to NERC. He also recognized Jennifer Sterling, Edison Elizeh, and Pete Brandien. He wished all of these individuals well in their next chapters.

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 need for ongoing collaboration and partnership to address the critical challenges ahead. He reported on the collaborative work among NERC and the Regional Entities to develop the Interregional Transfer Capability Study. Mr. Albright also remarked on ERO Enterprise alignment efforts, including a forthcoming initiative to identify common business practices and promote efficiency in compliance monitoring and enforcement activities. He concluded his remarks by expressing his appreciation for the support of the 2025 business plans and budgets, highlighting the Regional Entities' commitment to transparency in this process.

Report on the August 13 and 15, 2024 Closed Meetings
Mr. DeFontes reported that on August 13, 2024 and August 15, 2024 (as is its custom), the Board met in closed session with NERC management to review NERC management activities. On August 13, the Board discussed matters including security issues, pending U.S. Senate legislation, standards development projects addressing the FERC Order No. 901 directives for inverter-based resources, feedback on the draft NERC long term strategy, strategic engagement opportunities, and the resolutions for this meeting. On August 15, the Board met to discuss the recommendation approved by the Reliability Oversight Committee at its August 14 meeting for standards actions to address the FERC Order No. 901 directives. The Board met in 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 without management to review management activities.

Board Committee Reports

Corporate Governance and Human Resources

Mr. Hawkins, Committee Chair, reported on recent Committee meetings. At the August 13, 2024 closed meeting, the Committee reviewed initiatives to improve standing committee oversight and received an update on NERC's people and culture initiatives with a focus on NERC's succession planning framework. He also reported the Committee met in executive session with the CEO and the Vice President, People and Culture to discuss the trustee compensation study and personnel matters.

At the August 14, 2024 open meeting, the Committee performed the annual review of its mandate. No revisions were recommended to either the Committee mandate or the mandates of the other Board committees. NERC staff was asked to work with the leadership of the standing committees to launch a new self-assessment process and report back in February 2025. The Committee also received a people and culture update, focusing on NERC's work to establish a succession planning framework and its engagement and retention efforts.

Finance and Audit

Ms. Sidford, Committee Chair, reported on recent closed meetings of the Committee. At the July 9, 2024 closed meeting, the Committee approved the selection of RSM to continue as NERC's independent audit firm, reviewed stakeholder comments on the proposed 2025 business plan and budget, and reviewed the Regional Entity 2025 business plans and budgets. At the August 7, 2024 closed meeting, the Committee received an update on the Workday software project system implementation. The Committee also received an update on internal audit activities and approved the internal audit and advisory services annual budget and resource plan for 2025. The Committee then adjourned into executive session with internal audit and in executive session with members-only to discuss confidential matters.

Ms. Sidford reported that the Committee met in open session on August 14, 2024 to review financial matters and perform the annual review of its mandate. The Committee reviewed and recommended for Board acceptance the second quarter 2024 unaudited summary of results. Upon motion duly made and seconded, the Board approved the following resolution:

> **RESOLVED**, that the Board, upon recommendation of the Finance and Audit Committee, hereby accepts the Second Quarter 2024 NERC, Combined ERO Enterprise, and Regional Entity Unaudited Statement of Activities, as presented to the Board at this meeting.

Ms. Sidford reported that the Committee also reviewed and recommended for Board approval the NERC, Regional Entity, and Western Interconnection Regional Advisory Body Proposed 2025 Business Plans and Budgets and Associated Assessments. After discussion, and upon motion duly made and seconded, the Board approved the following resolution:

RESOLVED, that the Board hereby approves the following, substantially in the form presented to the Board at this meeting:

1. The proposed 2025 NERC Business Plan and Budget;
2. The proposed 2025 Business Plans and Budgets of the Regional Entities and the Western Interconnection Regional Advisory Body; and
3. The proposed 2025 assessments to recover the costs of the approved 2025 budgets, subject to adjustments to reflect final Net Energy for Load numbers, together with such other adjustments as may be necessary.

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.

Regulatory Oversight

Mr. DeFontes remarked on action taken by the Committee at its August 14 meeting to recommend that the Board use its longstanding authority under Section 321 of the NERC Rules of Procedure. He explained the Committee made this recommendation to ensure that NERC will have standards responsive to the FERC Order No. 901 directives by the November 4, 2024 filing deadline. He reported that while much of the hard work of NERC's stakeholders is paying off, with progress made on important IBR Reliability Standards through the usual standard development process, NERC does not have a clear path forward on the IBR grid disturbance ride through standard. As such, the Board must consider its options to ensure it can meet its regulatory responsibilities. Mr. DeFontes noted that the Board does not consider these options lightly. He thanked NERC's stakeholders for their work, noted the Section 321 process contemplates meaningful stakeholder engagement, and encouraged their continued participation.

Mr. Manning, Committee Chair, reported on recent Committee meetings. At the August 7, 2024 executive session, the Committee received updates on high priority standards projects, staff analysis of cross-border control issues, and the forthcoming analysis of the standards registered ballot body. The Committee also reviewed recommendations from the May 2024 National Cyber Exercise Program Offshore Wind Regulatory Cyber Tabletop Exercise, in which NERC participated along with representatives from several U.S. government agencies.

At the August 14, 2024 open meeting, the Committee performed the annual review of its mandate and received an update on regional Canadian activities. The Committee also received an update on the status of projects to address the FERC Order No. 901 directives regarding IBR issues that are due on November 4, 2024. Mr. Manning reported that the Committee engaged in a discussion of the paths forward and heard from several industry representatives. Following its discussion, the Committee took action to recommend that the Board use its longstanding authority under Section 321 of the NERC Rules of Procedure to ensure that NERC will have an IBR generator disturbance ride through standard responsive to the FERC Order No. 901 directives by the November 4, 2024 deadline. After discussion, and upon motion duly made and seconded, the Board approved the following resolutions:

WHEREAS, on October 19, 2023, the Federal Energy Regulatory Commission (FERC) issued a final rule, Order No. 901, directing the development of new or revised Reliability Standards to address reliability issues associated with the growth of inverter-based resources (IBRs) on the Bulk-Power System (BPS), and directing that NERC submit such standards to FERC on a three-year staggered timeframe;

WHEREAS, FERC directed that new or revised Reliability Standards addressing IBR performance requirements and IBR disturbance monitoring data sharing and post-event performance validation be submitted by November 4, 2024;

WHEREAS, the Project 2021-04 Modifications to PRC-002-2 drafting team and Project 2023-02 Analysis and Mitigation of BES IBR Performance Issues drafting team have developed draft Reliability Standards addressing Order No. 901 directives for disturbance monitoring requirements for IBRs and performance issues for IBRs, respectively, and both of these projects appear to be on track for a timely completion based on the results of recent ballots;

WHEREAS, the Project 2020-02 Modifications to PRC-024 (Generator Ride-through) drafting team has posted three successive drafts of new Reliability Standard PRC-029-1 intended to address Order No. 901 directives related to grid disturbance ride-through requirements for IBRs, and all three drafts have failed to meet with ballot body approval;

WHEREAS, the Board expresses its sincere appreciation to these drafting teams, who have worked very hard under tight deadlines to develop draft standards addressing these important IBR reliability issues, and to NERC's stakeholders for their feedback and contributions to each of the successive drafts;

WHEREAS, the failure of multiple successive drafts of the proposed Reliability Standard PRC-029-1 and the continued low accompanying approval rates render it unlikely that NERC's usual standard development process will produce a Reliability Standard responsive to FERC's Order No. 901 directives for grid disturbance ride-through requirements for IBRs by FERC's November 4, 2024 deadline;

WHEREAS, Section 321 of the Rules of Procedure is a long-standing provision of the NERC Rules of Procedure that provides special rules in cases such as these: where a ballot body 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 such as FERC;

WHEREAS, the Reliability Oversight Committee of the Board considered the above facts and circumstances at its August 14, 2024 meeting, determining that the issues raised with regard to proposed Reliability Standard PRC-029-1 seem amenable to a successful and consensus-driven resolution through the technical conference and ballot format described in Sections 321.2-321.4 of the NERC Rules of Procedure;

WHEREAS, the Reliability Oversight Committee, after discussion and upon motion duly made and seconded, therefore recommended the Board initiate proceedings under Sections 321.2-321.4 of the NERC Rules of Procedure to develop Reliability Standards addressing FERC directives for regarding grid disturbance ride-through requirements for IBRs in a timely manner;

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby finds that the ballot body for draft Reliability Standard PRC-029-1, developed under Project 2020-02 Modifications to PRC-024 (Generator Ride-through), has not approved a proposed Reliability Standard that contains provisions to adequately address specific matters identified in directives issued by FERC in Order No. 901;

BE IT FURTHER RESOLVED, that the Board finds it necessary and appropriate to employ the special processes described in Sections 321.2 – 321.4 of the NERC Rules of Procedure to develop one or more proposed draft standards that are responsive to the IBR grid disturbance ride-through issues identified in the directives issued by FERC in Order No. 901;

BE IT FURTHER RESOLVED, that the Board, in accordance with NERC Rules of Procedure Section 321.2, hereby directs the Standards Committee to work with NERC staff to carry out the following instructions:

- Convene a public technical conference to discuss the issues surrounding the FERC directives, including whether or not the proposed Reliability Standard PRC-029-1 (and, to the extent necessary, any conforming changes in proposed Reliability Standard PRC-024-4) being developed through Project 2020-02 Modifications to PRC-024 (Generator Ride-through) is just, reasonable, not unduly discriminatory or preferential, in the public interest, helpful to reliability, practical, technically sound, technically feasible, and cost-justified;
- Prepare a memorandum discussing the issues, an analysis of the alternatives considered, and other appropriate matters;
- Use the input from the technical conference to revise the proposed Reliability Standard(s), as appropriate; and
- Re-ballot the proposed Reliability Standard(s) one additional time, with such adjustments are necessary to meet the 45-day deadline provided in NERC Rules of Procedure Rule 321.2.1.

BE IT FURTHER RESOLVED, that the Board hereby directs NERC management to present the draft Reliability Standard(s) addressing the Order No. 901 IBR grid disturbance ride-through directives developed under these procedures that achieve at least an affirmative two-thirds majority vote of the weighted Segment votes cast, with a quorum established, to the Board for its consideration at the October 9, 2024 open meeting.

BE IT FURTHER RESOLVED, that if a draft Reliability Standard(s) developed under these procedures achieves at least a sixty percent affirmative majority vote of the weighted Segment votes cast with a quorum achieved, but less than an affirmative two-thirds majority vote, the Board hereby directs NERC management to post notice of the Board's intent to consider the draft Reliability Standard(s) at an open meeting to be held on October 28, 2024 and to solicit public comment on the draft standard in accordance with Section 321.4.1 of the NERC Rules of Procedure.

Mr. DeFontes acknowledged the stakeholder comments, made at the Committee meeting, to review the standard development process for lessons learned that may help avoid the need for the Board to consider similar action in the future.

Enterprise-wide Risk
Mr. Piro, Committee Chair, reported on the Committee's closed meeting on August 13, 2024. At its meeting, the Committee performed the annual review of its mandate. The Committee received updates on several matters, including reviews of two top risks (CMEP effectiveness and standards agility), the corporate compliance work plan, the enterprise risk management risk assessment overview and timeline, and internal audit matters. The Committee also received updates on Compliance and Certification Committee activities and Regional Entity activities. The Committee concluded in executive session to discuss confidential matters.

Technology and Security
Ms. Allen, Committee Chair, reported on the August 14, 2024 open meeting of the Committee. At this meeting, the Committee performed the annual review of its mandate and received updates on E-ISAC operations and efforts to expand NERC's enterprise analytics capabilities.

Nominating
Mr. Irving, Committee Chair, reported on recent closed meetings of the Committee. At its closed meeting on June 20, 2024, the Committee reviewed the selection of Carter Baldwin to conduct a search for a new Trustee and discussed the needs and expectations for the search. At its August 13, 2024 meeting, the Committee reviewed its mandate and the annual self-evaluation results. The Committee also reviewed the initial pool of Trustee candidates with the search firm.

Semi-Annual Standing Committee Reports to the Board

Personnel Certification Governance Committee
Mr. Cory Danson, Committee Chair, reported on recent and forthcoming activities of the Committee, referencing the materials included in the advance agenda package. The Board discussed Committee efforts.

Compliance and Certification Committee
Mr. Scott Tomashefsky, Committee Chair, reported on recent and forthcoming activities of the Committee, referencing the materials included in the advance agenda package. He highlighted the 2023 Stakeholder Perceptions Report, noting the positive trends in evaluations and recommendations, and welcomed the Board's participation in future meetings.

Reliability and Security Technical Committee
Mr. Rich Hydzik, Committee Chair, reported on recent and forthcoming activities of the Committee, referencing the materials included in the advance agenda package. He highlighted efforts to address the 2024 strategic risk

priorities and welcomed the Board's feedback or guidance on current initiatives and priorities. The Board discussed the number of important issues being addressed by the Committee and the need for continued coordination between the Committee and the Standards Committee to reduce the time from when an issue is identified to when it is addressed through a standard.

Standards Committee
Mr. Todd Bennett, Committee Chair, reported on recent and forthcoming activities of the Committee, highlighting efforts to expedite high priority standards projects. The Board discussed the volume of standards projects and whether adjustments are needed to focus resources on the most pressing issues.

Reliability Issues Steering Committee
Ms. Teresa Mogenson, Committee Chair, reported on recent and forthcoming activities of the Committee, referencing the materials included in the advance agenda package. She highlighted how the Committee's work informs the work of other committees. The Board discussed the report and asked the standing committee leadership to consider if current NERC staff support is sufficient to help them achieve their respective missions.

Other Matters and Reports

Input Letter and Member Representatives Committee Meeting
Mr. DeFontes remarked on the quality of presentations at the MRC meeting and thanked stakeholders and NERC staff for their contributions.

Semi-annual Review of the Achievements of the NERC Work Plan Priorities
Ms. Chanzes provided the mid-year update on the status of the NERC Work Plan Priorities, addressing the 2023-2025 strategic areas of focus: energy, security, agility, and sustainability. She highlighted that most work plan priorities for 2024 remain on track, and that staff is working to address items that are at risk of not being completed.

Engagement with MRC Sectors
Mr. Serna reviewed feedback received from interviews conducted with MRC members on ways to enhance the engagement between the MRC and NERC and the Board, addressing input received before and during the May 2024 Board meetings. He remarked on the overall strength of NERC's framework, highlighting opportunities to improve engagement through earlier and more proactive outreach on key issues, enhanced outreach with policy makers and consumers on reliability matters, and efforts to engage the broader NERC membership.

North American Energy Standards Board Report
Mr. Michael Desselle, Chair, NAESB Board of Directors, provided an update on NAESB activities on matters of mutual interest. He highlighted progress on communications standards addressing gas pipeline notifications and aligning Glossary terms across the NERC and NAESB standards, with work continuing on other projects. Mr. Desselle remarked on the collaboration between NAESB and NERC during his tenure. Mr. DeFontes thanked Mr. Desselle for his service.

North American Transmission Forum Report
Mr. DeFontes referenced the report included in the advance agenda package.

North American Generator Forum Report
No report was provided for this meeting.

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

Reliability and Security Technical Committee (RSTC) Proposed Charter Amendments

Action

Approve the revised RSTC Charter.

Background

In November 2019, the NERC Board of Trustees (Board) approved creation of the RSTC to replace the former Operating, Planning, and Critical Infrastructure Protection Committees and approved the initial RSTC Charter. Every two years, the RSTC updates its Charter as part of governance management. On February 15, 2024, the Board approved the last version of the RSTC Charter to incorporate administrative improvements and lessons learned. Since the Board's approval, the RSTC has carefully examined an opportunity to further improve its governance under the member election process.

With regard to member elections, the RSTC Charter provides two voting sector seats for each of Sectors 1-10 and 12, with ten voting at-large seats, in addition to the Chair and Vice-chair voting members. There are also non-voting members delineated in the Charter. This structure is designed to meet NERC's responsibility to ensure a balanced stakeholder process in its standing committees.

As the Electric Reliability Organization, NERC's rules must "assure its independence of the users and owners and operators of the bulk-power system, while assuring fair stakeholder representation in the selection of its directors and balanced decision making in any ERO committee or subordinate organizational structure." Section 215(c)(2)(A) of the Federal Power Act. *See also*, NERC Bylaws, Article VII, Section 1; *and* NERC Rules of Procedure, at Section 1302.[1]

Under the RSTC Charter, at-large members are selected to allow for geographic diversity, subject matter expertise, organizational types, and North American countries. To support such goals and full membership, the Charter at present also provides that if a sector receives no nominations during the election process, the seat will be converted to at-large membership for the remainder of term (referred to hereafter as the "at-large conversion process).

However, while there are benefits to this approach, conversions of sector seats without a nominee between 2020-2023 indicate that modifications would be appropriate to align with the Charter's original intent. In particular, the conversion process has led the at-large member group to grow from ten to fifteen members at times with four sectors under-represented.

[1] Section 1302 of the NERC Rules of Procedure (requiring that, "….All committees and other subgroups (except for those organized on other than a Sector basis because Sector representation will not bring together the necessary diversity of opinions, technical knowledge and experience in a particular subject area) must ensure that no two stakeholder Sectors are able to control the vote on any matter, and no single Sector is able to defeat a matter….").

Summary of Proposed Revisions
In 2024, the RSTC developed targeted draft revisions to the RSTC Charter to address concerns with respect to balanced sector membership.

On September 11, 2024, the RSTC approved submission of the revised RSTC Charter to the NERC Board for approval.

In particular, the revised draft RSTC Charter would:

(i) Eliminate the at-large conversion process and provide an opportunity for a Sector to seek a special election in writing if it has an open seat;

(ii) Provide a grace period for late sector nominees where a sector lacks nominees during the annual election;

(iii) State that the Nominating Subcommittee recommending a slate of at-large members for Board approval in February must prioritize sector balance along with other, existing, selection criteria; and

(iv) Include a cross-reference and citation to Section 1302 of the NERC Rules of Procedure with its rule regarding sector balance and stakeholder representation.

These tailored revisions would help ensure sector balance and fair stakeholder representation, while maintaining geographic diversity, high-level understanding and perspective on reliability risks, and experience and expertise. Approving the RSTC Charter changes by this October would enable the enhancements to take effect for the 2024-member election cycle.

Attachments
Clean Proposed RSTC Charter
Redline of Proposed RSTC Charter to Approved Version

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Reliability and Security Technical Committee Charter

February 2025

Approved by the NERC Board of Trustees: February __, 2025

RELIABILITY | RESILIENCE | SECURITY




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Preface

Electricity is a key component of the fabric of modern society and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of the North American Electric Reliability Corporation (NERC) and the six Regional Entities, is a highly reliable and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

Reliability | Resilience | Security
Because nearly 400 million citizens in North America are counting on us

The North American BPS is made up of six Regional Entities boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one Regional Entity while associated Transmission Owners/Operators participate in another.

MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	WECC

Section 1: Purpose

The Reliability and Security Technical Committee (RSTC) is a standing committee that strives to advance the reliability and security of the interconnected BPS of North America by:

- Creating a forum for aggregating ideas and interests, drawing from diverse industry stakeholder expertise, to support the ERO Enterprise's mission;
- Leveraging such expertise to identify solutions to study, mitigate, and/or eliminate emerging risks to the BPS for the benefit of industry stakeholders, the NERC Board of Trustees (Board) and ERO Enterprise staff and leadership; and,
- Overseeing the implementation of subgroup work plans that drive risk-mitigating technical solutions.

Section 2: RSTC Functions

Create a forum for industry stakeholders to support NERC programs in the development of key ERO Enterprise deliverables.

- Facilitate and advocate information sharing among relevant industry stakeholders;
- Review and provide guidance in developing deliverables critical to ERO functions, such as Reliability Standards, reliability assessments, requests for data (pursuant to Section 1600 of the NERC Rules of Procedure Section (ROP)), Implementation Guidance, and other analyses, guidelines, and reports;
- Solicit and coordinate technical direction, oversight activities, and feedback from industry stakeholders;
- Disseminate ERO deliverables to industry to enhance reliability;
- Develop internal and review external requests for industry actions and informational responses;
- Develop appropriate materials, as directed by ERO functions or the NERC Board, to support ERO Enterprise functions; and,
- Coordinate with ERO staff and liaise with government agencies and trade associations.
- Provide technical input and analyses on operating and planned BPS reliability and security, emerging issues and risks, and other general industry concerns at the request of the NERC Board or NERC staff.

Develop a two-year Strategic Plan to guide the deliverables of the RSTC and ensure appropriate prioritization of activities.

- Ensure alignment of the Strategic Plan with NERC priorities, reports and analyses, including the NERC Business Plan and Budget, ERO Enterprise Long-Term Strategy, , biennial Reliability Issues Steering Committee (RISC) ERO Reliability Risk Priorities report, State of Reliability report recommendations, Long-Term, Seasonal and Special Reliability Assessment recommendations and ongoing event analysis trends;
- Coordinate the objectives in the Strategic Plan with the Standing Committees Coordinating Group; and,
- Obtain annual NERC Board approval. The RSTC will target presenting the Strategic Plan to the Board at its February meeting, at the same time that the RSTC presents the full RSTC membership list in accordance with Section III below.

Coordinate and oversee implementation of RSTC subgroup work plans.

- Assign an RSTC member sponsor, as necessary, to subgroups to ensure alignment with RSTC schedules, processes, and strategic goals.
- Create and disband subcommittees, working groups and task forces to support ERO Enterprise functions;
- Harmonize and approve the work plans of subcommittees, working groups, and task forces with the Strategic Plan; and,
- Track the progress of the subcommittees, working groups, and task forces to ensure that they complete assigned activities as outlined in their work plans and in alignment with the RSTC Strategic Plan.

Advise the NERC Board of Trustees.

- Update the NERC Board semi-annually on progress in executing the Strategic Plan; and,
- Present appropriate deliverables to the NERC Board.

Section 3: Membership

Representation Model

The RSTC has a hybrid representation model consisting of the following types of memberships:

- Sector members;
- At-large members; and,
- Non-voting members.

Two members shall be elected to each of the following membership sectors:

- Sector 1 - Investor-owned Utility;
- Sector 2 – State or Municipal Utility;
- Sector 3 - Cooperative Utility;
- Sector 4 - Federal or Provincial Utility/Power Marketing Administration;
- Sector 5 - Transmission-Dependent Utility;
- Sector 6 - Merchant Electricity Generator;
- Sector 7 - Electricity Marketer;
- Sector 8 - Large End Use Electricity Customer;
- Sector 9 - Small End Use Electricity Customer;
- Sector 10 - ISO/RTO; and,
- Sector 12 - Government Representatives.

Selection of at-large members will allow for better balancing of representation on the RSTC of the following:[1]

- Regional Entity and Interconnection diversity (i.e., goal of having at least one representative from each Interconnection and Regional Entity footprint);
- Subject matter expertise (Planning, Operating, or Security);
- Organizational types (Cooperatives, Investor-Owned Utilities, Public Power, Power Marketing Agencies, etc.); and,
- North American countries, consistent with the NERC bylaws (Canada, Mexico, and U.S.) to support diversity of views on issues facing reliability of the North American BPS.

Upon expiration of his or her term as chair, the outgoing chair may remain a non-voting member of the RSTC for one year, in the interest of continuity.[2]

Below is a breakdown of voting and non-voting membership on the RSTC:

[1] *See,* NERC Sector 13 in the NERC Bylaws (2021).

[2] Provided that, if the outgoing chair is elected to represent a voting sector that individual would hold a voting membership position for the relevant term.

Voting Membership	
Name	**Voting Members**
Sectors 1-10 and 12	22
At-Large	10
Chair and Vice-Chair	2
Total	**34**

Non-Voting Membership[3]	
Non-Voting Member	**Number of Members**
NERC Secretary	1
United States Federal Government	2
Canadian Federal Government	1
Provincial Government	1
Former Chair	1
Total	**6**

Member Selection

RSTC members are not required to be from organizations who are NERC members.

Members are appointed to the RSTC upon approval of the NERC Board and serve on the RSTC at the pleasure of the NERC Board.

1. **Affiliates**

   A company, including its affiliates, may not have more than one member on the RSTC. Any RSTC member who is aware of a membership conflict of this nature is obligated to notify the RSTC secretary within 10 business days. The RSTC secretary will in turn report the conflict to the RSTC chair.

   Members impacted by such a conflict, such as through a merger of organizations, must confer among themselves to determine which member should resign from the RSTC and notify the secretary and chair; however, if they cannot reach an amicable solution to determine who will remain, the Nominating Subcommittee will review the qualifications of each member and make a recommendation to the NERC Board for final approval.

2. **Election of Sector Members**

   NERC members in each sector will annually elect members for expiring terms or open seats using a nomination and election process that is open, inclusive, and fair. If a sector has no nominations for one or both sector seats during the sector election period, the ~~RSTC will convert those~~ empty sector ~~seats to at-large seats~~seat will remain open until the end of the term unless a ~~valid~~late sector nomination for the recent election is received prior to the end of the at-large nomination period. ~~NERC Staff shall provide any existing sector representative written notice approximately one week before the end of the sector election period if there have been no nominees~~The RSTC Executive Committee (RSTC EC) may also call a special election for an open sector seat if requested in writing by a member from relevant sector with an empty seat, accompanied by supporting rationale for the RSTC EC's consideration.

[3] Upon recognition of NERC as the ERO, Mexican Government representation will be equitable and based approximately on proportionate Net Energy for Load.

Sector elections will be completed in time for the Nominating Subcommittee to identify and nominate at-large representatives as well as for the secretary to send the full RSTC membership list to the NERC Board for approval at its annual February meeting.

If an interim vacancy is created in a sector, a special election will be held unless it coincides with the annual election process. If a sector cannot fill an interim vacancy, then that sector seat will remain vacant until the next annual election. Notwithstanding the foregoing, upon written request from a member from relevant sector with an empty seat, accompanied by supporting rationale, the RSTC EC may hold an additional special in an attempt to fill the vacancy. Interim sector vacancies will not be filled with an at-large representative.

3. Nominating Subcommittee

The Nominating Subcommittee (RSTC NS) will consist of seven (7) members (the RSTC vice-chair and six (6) members drawing from different sectors and at-large representatives). Apart from the vice-chair, members of the RSTC ~~Executive Committee (RSTC~~ EC~~)~~ shall not serve on the RSTC NS.

The NS members are nominated by the RSTC chair and voted on by the full RSTC membership.

The term for members of the NS is one (1) year.

The RSTC NS is responsible for (a) recommending individuals for at-large representative seats, and, (b) managing the process to select the chair and/or vice-chair of the RSTC. The RSTC vice-chair shall recuse him or herself from this process (a) unless he or she is not seeking re-election, or (b) until the RSTC NS has concluded a vote to recommend the vice-chair for subsequent RSTC election to the chair position. At-large members on the RSTC NS shall recuse themselves from recommendations for at-large representative seats if they are seeking reappointment.

4. Selection of At-Large Members

The RSTC NS solicits and reviews nominations from the full RSTC and industry to fill at-large representative seats. After reaching consensus, the RSTC NS submits a recommended slate of at-large candidates to the Board. ~~During its selection process the RSTC NS will prioritize its consideration of candidates that would help ensure balanced sector representation on the RSTC.~~ To the extent practicable, the RSTC NS will balance the following criteria to select at-large members: (a) geographic diversity from all Interconnections and ERO Enterprise Regional Entities; (b) high-level understanding and perspective on reliability risks based on experience at an organization in a sector; ~~and,~~ (c) experience and expertise from an organization in the sector relevant to the RSTC; and (d) sector balance. The RSTC NS selection process shall be~~also ensure that at-large members include no more than two individuals that would be eligible for the same particular sector, except where it would ensure equitable representation from the United States and Canada in proportion to each country's percentage of total Net Energy for Load.~~consistent with Section 1302 of the NERC Rules of Procedure such that the Nominating Subcommittee's recommended slate would not cause any two stakeholder Sectors to control the vote on any matter, and that no single Sector is able to defeat a matter.[4]

5. Non-Voting Members

Non-voting members shall serve a term of two (2) years, just as voting members. At the start of the annual RSTC nomination process the RSTC secretary will coordinate with entities entitled to non-voting membership to identify representatives for any open non-voting seats. The RSTC secretary shall do this by reaching out to the relevant Governmental Authorities to solicit interest for non-voting member seats and forwarding those names to the RSTC NS for inclusion in the slate of candidates presented to the Board at its annual February

[4] *See,* NERC Rules of Procedure, at Section 1302 (stating in relevant part, "All committees and other subgroups (except for those organized on other than a Sector basis because Sector representation will not bring together the necessary diversity of opinions, technical knowledge and experience in a particular subject area) must ensure that no two stakeholder Sectors are able to control the vote on any matter, and no single Sector is able to defeat a matter.").

meeting. Where more than one candidate is proposed, the RSTC secretary will work with the relevant Governmental Authorities to reach a decision.

6. **International Representation**

   International representation on the RSTC shall be consistent with Article VIII Section 4 of the NERC Bylaws.

Member Expectations

RSTC members and the RSTC's subordinate groups are expected to act in accordance with this charter, as well as to accomplish the following:

- Adhere to NERC Antitrust Guidelines[45] and Participant Conduct Policy[56];
- Demonstrate and provide knowledge and expertise in support of RSTC activities;
- Where applicable, solicit comments and opinions from constituents and groups of constituents or trade organizations represented by the member and convey them to the RSTC;
- Respond promptly to all RSTC requests, including requests for reviews, comments, and votes on issues before the RSTC; and,
- During meetings, comply with the procedures outlined for that meeting and identified in this Charter. .

Sponsor Expectations

Sponsors are expected to act in accordance with this charter, as well as to accomplish the following:

- Understand and advance the expectations of the RSTC, not those of their sector or other interest group;
- Assure that recommendations and action plans are designed for implementation;
- Support the subgroup Chair and Vice-Chair in seeing the big picture without directing the activities of the subgroup; and,
- Liaise with the RSTC.

Member Term

Members shall serve a term of two years.

An RSTC member may serve a term shorter than two (2) years if:

- Two (2) members are simultaneously selected to a sector that did not have any existing members, in order to stagger their terms, one member will be assigned a one-year term and the second member will be assigned a two-year term.
- A member is selected to fill a vacant member seat between elections, the term will end when the term for that vacant seat ends.

There are no limits on the number of terms that members can serve.

Vacancies and Proxies

Membership vacancies may be filled between annual elections using the aforementioned selection process.

1. **Vacancies Created by the Member**

[45] https://www.nerc.com/pa/Stand/Resources/Documents/NERC_Antitrust_Compliances_Guidelines.pdf
[56] https://www.nerc.com/gov/Annual%20Reports/NERC_Participant_Conduct_Policy.pdf

In the event a member can no longer serve on the RSTC, that member will submit a written resignation to the RSTC chair or the secretary. A change in employment does not automatically require a member's resignation and will be evaluated on a case-by-case basis.

2. Vacancies Requested by the Chair

The chair may request any RSTC member who ceases to participate in the RSTC consistent with member expectations (above) and to the satisfaction of the chair, to submit a resignation or to request continuation of membership with an explanation of extenuating circumstances. If a written response is not received within 30 days of the chair's request, the lack of response will be considered a resignation. If the chair is not satisfied with a written response, the RSTC chair will refer the matter to the NERC Board.

3. Vacancies Requested by the Board

RSTC members serve at the pleasure of the NERC Board. The NERC Board may initiate a request for resignation, removal, or replacement of a member from the RSTC, as it deems appropriate or at the request of the RSTC chair.

4. Proxies

A voting member may select a proxy who attends and votes during all or a portion of a committee meeting in lieu of a voting member, provided that the absent voting representatives notifies the RSTC chair, vice chair, or secretary of the proxy. A proxy may not be given to another RSTC member. A proxy must meet the RSTC's membership eligibility requirements, including affiliate restrictions.

To permit time to determine a proxy's eligibility, all proxies must be submitted to the secretary in writing at least one week prior to the meeting (electronic transmittal is acceptable) for approval by the chair. Any proxy submitted after that time will be accepted at the chair's discretion.

Section 4: Meetings

Open meetings will be conducted in accordance with this Charter. The Chair may consult Robert's Rules of Order for additional guidance.

Quorum

The quorum necessary for transacting business at meetings of the RSTC is two-thirds of the voting members currently on the RSTC's roster and is determined once at each meeting.

If a quorum is not determined, the RSTC may not take any actions requiring a vote; however, the chair may allow discussion of the agenda items.

Voting

Actions by the RSTC will be approved upon receipt of the affirmative vote of two-thirds of the votes cast at any meeting at which a quorum is present. An abstention ("present" vote) does not count as a vote cast.

Voting may take place during regularly scheduled in-person meetings, via electronic mail, or via conference call/virtual meeting.

Refer to Section 7 for voting procedures.

Executive, Open and Closed Sessions

The RSTC and its subordinate groups hold meetings open to the public, except as noted herein. Although meetings are open, only voting members may offer and act on motions.

All meetings of the Executive Committee and the RSTC NS shall be conducted in closed session.

The chair may also hold closed sessions in advance of the open meeting with limited attendance based on the confidentiality of the information to be disclosed at the meeting. Such limitations should be applied sparingly and on a non-discriminatory basis. Any discussion of confidential information in a closed session shall be consistent with Section 1500 of the NERC ROP. [67]

Majority and Minority Views

All members of a committee will be given the opportunity to provide alternative views on an issue. The results of committee actions, including recorded minutes, will reflect the majority as well as any minority views of the committee members.

Action without a Meeting

Any action required or permitted at a meeting of the committee may be taken without a meeting at the request of the chair.

Such action without a meeting will be performed by electronic ballot (e.g., telephone, email, or Internet survey) and considered a roll call ballot. The secretary will announce the action required at least five business days before the date on which voting commences. As time permits, members should be allowed a window of ten (10) business days to vote. The secretary will document the results of such an action within ten (10) business days of the close of the voting period. Such action must meet the regular meeting quorum and voting requirements above.

[67] Section 1500 of the NERC ROP - https://www.nerc.com/FilingsOrders/us/RuleOfProcedureDL/NERC%20ROP%20(With%20Appendicies).pdf

Section 5: Officers and Executive Committee

Officers

The RSTC will have two officers – one chair and one vice-chair.

Officers shall be selected as follows:

- The RSTC NS solicits nominations for chair and vice-chair through an open nomination process. Self-nominations are permitted during the open nomination period.
- At the close of the nomination period, the RSTC NS will propose a chair and a vice-chair candidate. The full RSTC will elect the chair and vice chair.
- The chair and vice chair must be a committee member and shall not be from the same sector.
- The elected chair and vice-chair are appointed by the NERC Board.
- No individual may serve more than one term as vice chair and one term as chair unless an exception is approved by the Board. A term lasts two years.

Upon expiration of his or her term as chair, the outgoing chair may remain a non-voting member of the RSTC for one year, in the interest of continuity.[~~7~~8]

Secretary

NERC will appoint the RSTC secretary.

A member of the NERC staff will serve as the secretary of the RSTC. The secretary will do the following:

- Manage the day-to-day operations and business of the RSTC;
- Prepare and distribute notices of the RSTC meetings, prepare the meeting agenda, and prepare and distribute the minutes of the RSTC meetings;
- Facilitate the election/selection process for RSTC members; and,
- Act as the RSTC's parliamentarian.

Chair

The chair will direct and provide general supervision of RSTC activities, including the following:

- Coordinate the scheduling of all meetings, including approval of meeting duration and location;
- Develop agendas and rule on any deviation, addition, or deletion from a published agenda;
- Preside at and manage meetings, including the nature and length of discussion, recognition of speakers and proxies, motions, and voting;
- Act as spokesperson for the RSTC at forums inside and outside of NERC; and,
- Attend meetings of the NERC Board when necessary to report on RSTC activities.

Vice Chair

The vice chair will assume the responsibilities of the chair under the following conditions:

[~~7~~8] Provided that, if the outgoing chair is elected to represent a voting sector that individual would hold a voting membership position for the relevant term

- At the discretion of the chair (for brief periods of time);
- When the chair is absent or temporarily unable to perform the chair's duties; or,
- When the chair is permanently unavailable or unable to perform the chair's duties. In the case of a permanent change, the vice chair will continue to serve until a new chair is nominated and appointed by the NERC Board.

Executive Committee

The RSTC EC shall consist of six (6) members:

- Chair;
- Vice-chair;
- Four (4) RSTC voting members selected by the RSTC chair and vice-chair with a reasonable balance of subject matter expertise in Operations, Planning, and/or Security and with consideration for diversity in representation (i.e., sectors, Regional Entities, Interconnections, etc.).
    - The RSTC chair and vice-chair shall evaluate composition of the RSTC EC within six months of their election as officers for the appropriate balance of technical expertise, geographical representation, and tenure.

The RSTC EC of the RSTC is authorized by the RSTC to act on its behalf between regular meetings on matters where urgent actions are crucial and full RSTC discussions are not practical. The RSTC shall be notified of such urgent actions taken by the RSTC EC within a week of such actions. These actions shall also be included in the minutes of the next open meeting.

Ultimate RSTC responsibility resides with its full membership whose decisions cannot be overturned by the EC. The RSTC retains the authority to ratify, modify, or annul RSTC EC actions.

After general solicitation from RSTC membership, the RSTC EC will appoint any sponsors of subgroups.

Section 6: RSTC Subordinate Groups

The RSTC organizational structure will be aligned as described by the NERC Bylaws to support a superior-subordinate hierarchy.

The RSTC may establish subcommittees, working groups, and task forces as necessary. The RSTC will be the responsible sponsor of all subordinate subcommittees, working groups, or task forces that it creates, or that its subordinate subcommittees and working groups may establish.

Officers of subordinate groups will be appointed by the chair of the RSTC. Where feasible, officers shall be selected from individuals employed at entities within NERC membership sectors 1 through 12 to support sufficient expertise and diversity in execution of the subordinate group's responsibilities.

Subcommittees, working groups, and taskforces will conduct business in a manner consistent with all applicable sections of this Charter, including the NERC Antitrust Guidelines[~~8~~9] and Participant Conduct Policy[~~9~~10].

Subcommittees

The RSTC may establish subcommittees to which the RSTC may delegate some of RSTC's functions. The RSTC will approve the scope of each subcommittee it forms. The RSTC chair will appoint the subcommittee officers (typically a chair and a vice chair) for a specific term (generally two years). The subcommittee officers may be reappointed for up to two additional terms. The subcommittee will work within its assigned scope and be accountable for the responsibilities assigned to it by the committee. The formation of a subcommittee, due to the permanency of the subcommittee, will be approved by the NERC Board.

Working Groups

The RSTC may delegate specific continuing functions to a working group. The RSTC will approve the scope of each working group that it forms. The RSTC chair will appoint the working group officers (typically a chair and a vice chair) for a specific term (generally two (2) years). The working group officers may be reappointed for one (1) additional term. The RSTC will conduct a "sunset" review of each working group every year. The working group will be accountable for the responsibilities assigned to it by the RSTC or subcommittee and will, at all times, work within its assigned scope. The RSTC should consider transitioning to a subcommittee any working group that is required to work longer than two terms.

Task Forces

The RSTC may assign specific work to a task force. The RSTC will approve the scope of each task force it forms. The RSTC chair will appoint the task force officers (typically a chair and a vice chair). Each task force will have a finite duration, normally less than one year. The RSTC will review the task force scope at the end of the expected duration and review the task force's execution of its work plan at each subsequent meeting of the RSTC until the task force is retired. Action of the RSTC is required to continue the task force past its defined duration. The RSTC should consider transitioning to a working group any task force that is required to work longer than two years.

[~~8~~9] https://www.nerc.com/pa/Stand/Resources/Documents/NERC_Antitrust_Compliances_Guidelines.pdf
[~~9~~10] https://www.nerc.com/gov/Annual%20Reports/NERC_Participant_Conduct_Policy.pdf

Section 7: Meeting Procedures

Voting Procedures for Motions

In-Person

- The default procedure is a voice vote.
- If the chair believes the voice vote is not conclusive, the chair may call for a show of hands.
- The chair will not specifically ask those who are abstaining to identify themselves when voting by voice or a show of hands. If the chair desires a roll call, the secretary will call each member's name.

  Members answer "yes," "no," or "present" if they wish to abstain from voting. As provided above, an abstention does not count as a vote cast.

Conference Call / Virtual[~~10~~11]

- All voting shall default to being conducted through use of a poll.
- Where a need to record each member's vote is requested or identified, the RSTC may conduct voting via a roll call vote.

Minutes

- Meeting minutes are a record of what the committee did, not what its members said.
- Minutes should list discussion points where appropriate but should usually not attribute comments to individuals. It is acceptable to cite the chair's directions, summaries, and assignments.
- All Committee members are afforded the opportunity to provide alternative views on an issue. The meeting minutes will provide an exhibit to record minority positions.

[~~10~~11] Virtual meetings include those where virtual attendance is possible, such as a fully or partially virtual meeting.

Section 8: RSTC Deliverables and Approval Processes

The RSTC will abide by the following to approve, endorse, or accept committee deliverables.

Reliability Guidelines, Security Guidelines and Technical Reference Documents

Reliability Guidelines, Security Guidelines, and Technical Reference Documents suggest approaches or behavior in a given technical area for the purpose of improving reliability.

Reliability and Security Guidelines

Reliability Guidelines and Security Guidelines are not binding norms or mandatory requirements. Reliability Guidelines and Security Guidelines may be adopted by a responsible entity in accordance with its own facts and circumstances.

1. **New/updated draft Guideline approved for industry posting.**

   The RSTC accepts for posting for industry comment (i) the release of a new or updated draft Guideline developed by one of its subgroups or the committee as a whole; or (ii) the retirement of an existing Guideline.

   The draft Guideline or retirement is posted as "for industry-wide comment" for 45 days. If the draft Guideline is an update, a redline version against the previous version must also be posted.

   After the public comment period, the RSTC will post the comments received as well as its responses to the comments. The RSTC may delegate the preparation of responses to a committee subgroup.

   A new or updated Guideline which considers the comments received, is approved by the RSTC and posted as "Approved" on the NERC website. Updates must include a revision history and a redline version against the previous version. Retirements are also subject to RSTC approval.

   After posting a new or updated Guideline, the RSTC will continue to accept comments from the industry via a web-based forum where commenters may post their comments.

   a. Each quarter, the RSTC will review the comments received.

   b. At any time, the RSTC may decide to update the Guideline based on the comments received or on changes in the industry that necessitate an update.

   c. Updating an existing Guideline will require that a draft updated Guideline be posted and approved by the RSTC in the above steps.

2. **Review of Approved Reliability Guidelines, Security Guidelines and Technical Reference Documents**

   Approved Reliability Guidelines or Technical Reference Document shall be reviewed for continued applicability by the RSTC at a minimum of every third year since the last revision.

3. **Communication of New/Revised Reliability Guidelines, Security Guidelines and Technical Reference Documents**

   In an effort to ensure that industry remains informed of revisions to a Reliability Guideline or Technical Reference Document or the creation of a new Reliability Guideline or Technical Reference Document, the RSTC subcommittee responsible for the Reliability Guideline will follow an agreed upon process. Reliability Guidelines, Security Guidelines, and Technical Reference Documents (including white papers as discussed below) shall be posted on the RSTC website.

4. **Coordination with Standards Committee**

Standards Committee authorization is required for a Reliability Guideline or Security Guidelines to become a supporting document that is posted with or referenced from a NERC Reliability Standard. See Appendix 3A in the NERC's ROP under "Supporting Document."

Section 1600 Data or Information Requests[~~11~~12]

A report requested by the RSTC that accompanies or recommends a Rules of Procedure (ROP) Section 1600 - Data or Information Request will follow the process outlined below:

1. This Section 1600 request, with draft supporting documentation, will be provided to the RSTC at a regular meeting.
2. The draft Section 1600 data request and supporting documentation will be considered for authorization to post for comments at the RSTC regular meeting.
3. A committee subgroup will review and develop responses to comments on the draft Section 1600 data request and will provide a final draft report, including all required documentation for the final data request, to the RSTC at a regular meeting for endorsement.
4. The final draft of the 1600 data request – with responses to all comments and any modifications made to the request based on these comments – will be provided to the NERC Board.

Other Types of Deliverables

1. **Policy Outreach**

   On an ongoing basis, the RSTC will coordinate with the forums, policymakers, and other entities to encourage those organizations to share Reliability Guidelines, technical reference documents and lessons learned to benefit the industry.

   Reports required under the NERC ROP or as directed by an Applicable Governmental Authority or the NERC Board: documents include NERC's long-term reliability assessment, special assessments, and probabilistic assessments. These reports may also be used as the technical basis for standards actions and can be part of informational filings to FERC or other government agencies.

2. **White Papers**

   Documents that explore technical facets of topics, making recommendations for further action. They may be written by subcommittees, working groups, or task forces of their own volition, or at the request of the RSTC. Where feasible, a white paper recommending potential development of a standard authorization request (SAR) shall be posted for comment on the RSTC website. White papers will be posted on the RSTC webpage, after RSTC approval.

3. **Technical Reference Documents and Technical Reports**

   Documents that serve as a reference for the electric utility industry and/or NERC stakeholders regarding a specific topic of interest. These deliverables are intended to document industry practices or technical concepts at the time of publication and may be updated as deemed necessary, per a recommendation by the RSTC or its subgroups to reflect current industry practices. Technical reference documents and reports will be posted on the RSTC webpage, after RSTC approval.

[~~11~~12] Section 1600 of the NERC ROP - https://www.nerc.com/FilingsOrders/us/RuleOfProcedureDL/NERC%20ROP%20(With%20Appendicies).pdf. This process only applies to Section 1600 requests developed by the RSTC and its subordinate groups.

4. **Implementation Guidance**

   Documents providing examples or approaches for registered entities to comply with standard requirements. The RSTC is designated by the ERO Enterprise as a pre-qualified organization for vetting Implementation Guidance in accordance with NERC Board -approved Compliance Guidance Policy. Implementation Guidance that is endorsed by the RSTC can be submitted to the ERO Enterprise for endorsement, allowing for its use in Compliance Monitoring and Enforcement Program (CMEP) activities.

5. **Standard Authorization Requests (SAR)**

   A form used to document the scope and reliability benefit of a proposed project for one or more new or modified Reliability Standards or definitions or the benefit of retiring one or more approved Reliability Standards.

   Any entity or individual, including NERC Committees or subgroups and NERC Staff, may propose the development of a new or modified Reliability Standard. A SAR prepared by a subordinate group of the RSTC must be endorsed by the RSTC prior to presentation to the Standards Committee. Each SAR should be accompanied by a technical justification that includes, at a minimum, a discussion of the reliability-related benefits and costs of developing the new Reliability Standard or definition, and a technical foundation document (e.g., research paper) to guide the development of the Reliability Standard or definition. The technical foundation document should address the engineering, planning and operational basis for the proposed Reliability Standard or definition, as well as any alternative approaches considered to SAR development.

   RSTC endorsement of a SAR supports: (a) initial vetting of the technical material prior to the formal Standards Development Process, and, (b) that sound technical justification has been developed, and the SAR will not be remanded back to the RSTC to provide such justification per the Standard Processes Manual.

Review Process for other Deliverables

Deliverables with a deadline established by NERC management or the NERC Board will be developed based on a timeline reviewed by the RSTC to allow for an adequate review period, without compromising the desired report release dates. Due to the need for flexibility in the review and approval process, timelines are provided as guidelines to be followed by the committee and its subgroups.

A default review period of no less than 10 business days will be provided for all committee deliverables. Requests for exceptions may be brought to the RSTC at its regular meetings or to the RSTC EC if the exception cannot wait for an RSTC meeting.

In all cases, a final report may be considered for approval, endorsement, or acceptance if the RSTC, as outlined above, decides to act sooner.

Actions for Deliverables

1. **Approve:**

   The RSTC has reviewed the deliverable and supports the content and development process, including any recommendations.

2. **Accept:**

   The RSTC has reviewed the deliverable and supports the development process used to complete the deliverable.

3. **Remand:**

   The RSTC remands the deliverable to the originating subcommittee, refer it to another group, or direct other action by the RSTC or one of its subcommittees or groups.

4. **Endorse:**

   The RSTC agrees with the content of the document or action and recommends the deliverable for the approving authority to act on. This includes deliverables that are provided to the RSTC by other NERC committees. RSTC endorsements will be made with recognition that the deliverable is subject to further modifications by NERC Executive Management and/or the NERC Board. Changes made to the deliverable subsequent to RSTC endorsement will be presented to the RSTC in a timely manner. If the RSTC does not agree with the deliverable or its recommendations, it may decline endorsement. It is recognized that this does not prevent an approval authority from further action.

Project 2020-06 Verifications of Models and Data for Generators

Action

Adopt the following new definition for inclusion in the *Glossary of Terms used in NERC Reliability Standards*, and authorize staff to file with applicable regulatory authorities:

- Proposed New Definition for Inclusion in the Glossary of Terms used in NERC Reliability Standards:
  - [Inverter-Based Resource (IBR)]
- Implementation Plan
  - [Implementation Plan]

Background

NERC initiated Project 2020-06 Model Verifications of Models and Data for Generators in 2021 to address a Standard Authorization Request submitted by the NERC Inverter-based Resource Performance Subcommittee (IRPS). In 2020, the IRPS published a white paper[1] summarizing the results of its review of NERC Reliability Standards, a review which it had undertaken to determine if there were opportunities to address gaps or otherwise improve the standards to assure reliability in light of the unprecedented growth of IBRs on the bulk power system. Among other things, the IRPS recommended revisions to MOD-026-1 and MOD-027-1 related to model verification for IBRs.

On October 19, 2023, while work was underway on this project, the U.S. Federal Energy Regulatory Commission (the "Commission" or "FERC") issued Order No. 901.[2] In Order No. 901, the Commission directed NERC to develop new or modified Reliability Standards addressing reliability concerns related to IBRs "all stages of interconnection, planning, and operations,"[3] and to submit them to the Commission on a three-year, staggered timeframe. For the first set, the Commission directed the development of new or modified Reliability Standards that address IBR performance requirements, disturbance monitoring data sharing, and post-event performance validation for registered IBRs.[4] In January 2024, NERC submitted a filing to FERC outlining a comprehensive work plan to address the directives within Order No. 901. Within the workplan, NERC identified three active standards development projects that would need to be filed for regulatory approval with FERC by November 4, 2024. These projects include: Project 2020-02 Modifications to PRC-024 (Generation Ride Through); Project 2021-04 (Modifications to PRC-

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1 NERC IRPTF, IRPTF Review of NERC Reliability Standards (Mar. 2020), https://www.nerc.com/comm/PC/InverterBased%20Resource%20Performance%20Task%20Force%20IRPT/Review_of_NERC_Reliability_Standards_White_Paper.pdf [hereinafter "IRPTF White Paper"].

2 Order No. 901, *Reliability Standards to Address Inverter-Based Resources*, 185 FERC ¶ 61,042 (2023) [hereinafter Order No. 901].

3 *Id.* at P 25.

4 "Registered IBRs" refers currently registered IBRs, as well as IBRs that will be registered under the recently-approved revisions to the NERC Rules of Procedure registry criteria for Generator Owner and Generator Operator.

002); and Project 2023-02 (Analysis and Mitigation of BES Inverter-Based Resource Performance Issues).

In light of these multiple standards development projects to address the risks related to IBRs, NERC determined that a single drafting team would move forward with a definition of Inverter-Based Resource that would be leveraged by all other projects. The Project 2020-06 drafting team was selected to coalesce development efforts for the definition and coordinate the proposed definition with the other NERC projects addressing IBR issues.

Summary

To address the goals of this project and other Reliability Standards development projects addressing IBR issues, the Project 2020-06 Model Verifications of Models and Data for Generators drafting team proposed the creation of one new defined term for inclusion in the *Glossary of Terms used in NERC Reliability Standards*: Inverter-Based Resource.

The addition of the defined term Inverter-Based Resource (IBR) term will promote a common understanding of what an IBR is. This term is used in the Order No. 901 "Milestone 2" Reliability Standards proposed for adoption at this meeting. This term will also be used in future standards development projects addressing IBR issues.

Standards Development Process

Initially, Project 2020-06 proposed two defined terms: Inverter-Based Resource (IBR) and IBR Unit. The proposed definitions were posted for an initial 45-day formal comment period and ballot from November 16, 2023 – January 9, 2024. As noted in the table below, both the proposed definition of IBR and IBR Unit failed in the initial ballot. The two terms were revised and posted for a 45-day formal comment period and additional ballot from February 22 – April 8, 2024. In the additional ballot, the proposed definition of IBR received a passing approval rating, while the proposed definition of IBR Unit did not. Based on the comments received, the drafting team revised the definition of IBR to discontinue use of the proposed term IBR Unit, and determined to move forward only with a revised definition of IBR. The proposed definition of IBR was posted for a 45-day formal comment period and additional ballot from July 12 – August 12, 2024, which achieved a passing approval rating.

The drafting team conducted a final ballot on the proposed definition of IBR from September 3, 2024 through September 12, 2024, which achieved a passing approval rating.

The ballot results for each definition are below.

	Initial Ballot (11/16/23 - 01/09/24)	Additional Ballot (02/22 - 04/08/24)	Additional Ballot (07/12 - 08/12/24)	Final Ballot (09/03 - 09/13/24)
Definition	**Quorum / Approval**	**Quorum / Approval**	**Quorum / Approval**	**Quorum / Approval**
Inverter-Based Resource (IBR)	89.36%/43.82%	83.33%/67.55%	85.46% / 91.57%	90.07% / 92.82%
IBR Unit	89.68% / 45.04%	83.27% /61.07%	-	-
Implementation Plan	88.93% / 58.52%	83.21%/70.04%	85% / 92.45%	89.64% / 93.66%

Minority Issues

The first two ballots included the proposed defined term "IBR Unit," which was embedded in the proposed definition of IBR. The proposed definition of IBR Unit was balloted twice, and failed both ballots, which caused the drafting team to discontinue it. A minority of entities may still feel the term is necessary. While the drafting team determined not to pursue a defined term "IBR Unit" at this time, based on the ballot results, in the future such a term may be reconsidered or defined on a standard-only basis if appropriate.

Pertinent FERC Directives

None.

Cost Effectiveness

No comments were received regarding cost concerns, and the drafting team does not anticipate significant costs associated with the proposed definition.

Additional Information

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

- Project 2020-06 Verification of Models and Data for Generators

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Standards Actions

Jamie Calderon, Director of Standards Development
Board of Trustees Meeting
October 8, 2024

RELIABILITY | RESILIENCE | SECURITY




Project 2020-06 Inverter-Based Resource (IBR) Term

- Assigned development of new term(s) for inverter-based resources
- Final
  - 92.82% - 9/4/2024
- Reliability Benefits
  - Promote a unified term for use in Reliability Standards

Limited Disclosure

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Project 2020-06 Inverter-Based Resource (IBR) Term

Action - Adopt

- **Defined Term – "IBR"**

Limited Disclosure

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Questions and Answers

Project 2020-02 Modifications to PRC-024 (Generator Ride-through)

Action

Adopt the following standard documents and authorize staff to file with the applicable regulatory authorities:

- Reliability Standard – PRC-029-1 – Frequency and Voltage Ride-through Requirements for Inverter-based Resources
  - [PRC-029-1 Standard]
- Reliability Standard - PRC-024-4 – Frequency and Voltage Protection Settings for Synchronous Generators, Type 1 and Type 2 Wind Resources, and Synchronous Condensers
  - [PRC-024-4 Standard] [Redline to last approved]
- Proposed New Definition for Inclusion in the *Glossary of Terms used in NERC Reliability Standards*
  - [Ride-through]
- Implementation Plan
  - [Implementation Plan]
- Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs)
  - [VRF VSL Justification – PRC-029-1]
  - [VRF VSL Justification – PRC-024-4]
- Retirement
  - [Reliability Standard - PRC-024-3 – Frequency and Voltage Protection Settings for Generating Resources]

Background

NERC initiated Project 2020-02 Modifications to PRC-024 (Generator Ride-through) in 2020 in response to multiple NERC assessments and white papers to address deficiencies of reactive power support from nonsynchronous generating resources and transmission-connected dynamic reactive resources. This project originally included revisions to multiple Reliability Standards (MOD-025, MOD-026, MOD-027, PRC-019, and PRC-024) to comprehensively address this issue by including all types of dynamic reactive resources within those standards. As other standards development projects have been initiated addressing inverter-based resources (IBRs) within Reliability Standards MOD-025, MOD-026, MOD-027, and PRC-019, the scope of Project 2020-02 was adjusted in 2022 to only address these generating resources within the PRC-024 standard.

On October 19, 2023, the U.S. Federal Energy Regulatory Commission (FERC) issued Order No. 901.[1] In Order No. 901, FERC directed NERC to develop new or modified Reliability Standards

[1] *Reliability Standards to Address Inverter-Based Resources Final Rule,* Order No. 901, 185 FERC ¶ 61,042 (2023) ("Order No. 901").

addressing reliability concerns related to IBRs "all stages of interconnection, planning, and operations,"[2] and to submit them to FERC on a three-year, staggered timeframe. For the first set, FERC directed the development of new or modified Reliability Standards that address IBR performance requirements, requirements for disturbance monitoring data sharing, post-event performance validation for registered IBRs.[3] In January 2024, NERC submitted a filing to FERC outlining a comprehensive work plan to address the directives within Order No. 901.[4] Within the work plan, NERC identified three active standards development projects that would need to be filed for regulatory approval with FERC by November 4, 2024. These projects include Project 2020-02 Modifications to PRC-024 (Generation Ride Through); Project 2021-04 (Modifications to PRC-002); and Project 2023-02 (Analysis and Mitigation of BES Inverter-Based Resource Performance Issues).

Accordingly, proposed Reliability Standards PRC-029-1 and PRC-024-4 related to performance requirements for registered IBRs were aligned with associated regulatory directives from Order No. 901 and the scope of other projects related to "Milestone 2" of NERC's Order No. 901 Work Plan.

Summary

Proposed Reliability Standard PRC-029-1 would be a new Reliability Standard that would require Generator Owners (GOs) of IBRs to ensure the design and operation of those resources to ride-through voltage and frequency system disturbances. The proposed standard includes requirements to demonstrate the performance of IBR during voltage and frequency-based disturbances, as identified by System operators. Ride-through performance-based requirements were included within the scope of the Standard Authorization Request assigned to this drafting team, align with Order No. 901 directives assigned to this team, and address the reliability need by expanding beyond the scope of existing PRC-024 as an equipment setting standard.

Included with the performance-based requirements are objective-based requirements to require GOs to assure the design of their IBRs so they will ride-through voltage and frequency disturbances. This approach aligns with the preferred establishment of a "defense in-depth" strategy needed to effectively address the industry-recognized reliability need and assure IBR can ride-through these types of disturbances.

As directed by FERC, the proposed standard includes as applicable entities both the GOs owning bulk electric system IBRs that are currently registered with NERC, as well as the GOs of non-bulk electric system IBRs that meet the technical criteria established in the recently approved revisions to the NERC Rules of Procedure registry criteria for GOs.

Proposed Reliability Standard PRC-024-4 contains revisions that will enable the standard to be retained as a protection-based standard with applicability to only synchronous generators, synchronous condensers, and Type 1 and Type 2 wind units. The different standard applicability is supported technically by the different natures of the different generation resources, including their risks, performance, and equipment capabilities.

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[2] *Id.* at P 25.

[3] "Registered IBRs" refers currently registered IBRs, as well as IBRs that will be registered under the recently approved revisions to the NERC Rules of Procedure registry criteria for Generator Owner and Generator Operator.

[4] *Informational Filing of NERC Regarding the Development Reliability Standards Responsive to Order No. 901*, Docket No. RM22-12-000 (Jan. 17, 2024), available here.

Standards Development Process

On December 13, 2023, the Standards Committee (SC) granted the drafting team's request for waiver due to regulatory deadlines. The waiver provided the following: (1) initial formal comment and ballot period reduced from 45 days to as few as 25 calendar days, with ballot pools formed in the first 10 days, and initial ballot and non-binding poll of VRFs and VSLs conducted during the last 10 days of the comment period; (2) additional formal comment and ballot period(s) reduced from 45 days to as few as 15 calendar days, with ballot(s) and non-binding poll(s) conducted during the last 10 days of the comment period; and (3) final ballot reduced from 10 days to as few as 5 calendar days.

For the initial posting, the drafting team proposed new Reliability Standard PRC-029-1- and revised Reliability Standard PRC-024-4. A proposed draft of PRC-029-1 and PRC-024-4 were posted for an initial formal comment period and ballot from March 27, 2024 – April 22, 2024. The initial draft for PRC-029-1 failed to achieve the required ballot body approval with an approval rating of 25.37% and quorum of 91.01%. The non-binding polls for the VRFs and VSLs received 25.15% percent supportive opinions with 88.45% percent quorum. The initial draft for PRC-024-4 failed to achieve the required ballot body approval with an approval rating of 61.73% and quorum of 91.51%. The non-binding polls for the VRFs and VSLs received 63.79% percent supportive opinions with 89.37% percent quorum. The joint Implementation Plan failed to achieve the required ballot body approval with an approval rating of 37.5% and quorum of 91.14%.

The first additional ballot for proposed Reliability Standards PRC-029-1 and PRC-024-4 was posted for an additional formal comment period and ballot from June 18, 2024 to July 8, 2024. The additional ballot for PRC-029-1 failed to achieve the required ballot body approval, with an approval rating of 35.45% and quorum of 85.39%. The non-binding polls for the VRFs and VSLs received 29.03% percent supportive opinions with 82.47% percent quorum. The additional ballot for PRC-024-4 passed with an approval rating of 82.7% and quorum of 85.98%, with the non-binding polls receiving 76.51% supportive opinions with 83.07% quorum. The joint Implementation Plan failed to achieve the required ballot body approval with an approval rating of 48.59% and quorum of 85.98%.

The second additional ballot for proposed Reliability Standard PRC-029-1 was posted for an additional formal comment period and ballot from July 22, 2024 to August 12, 2024. The second additional ballot failed to achieve the required ballot body approval, with an approval rating of 52.89% and quorum of 89.51%. The non-binding polls for the VRFs and VSLs received 42.58% percent supportive opinions with 88.05% percent quorum. The Implementation Plan received 60.04% approval and 89.30% quorum.

On August 15, 2024, the NERC Board of Trustees invoked Section 321 of the NERC Rules of Procedure, noting that the failure of multiple successive drafts of proposed Reliability Standard PRC-029-1 and low approval rates rendered it unlikely that NERC's usual standard development process would produce a Reliability Standard responsive to FERC's Order No. 901 directives for grid disturbance ride-through requirements for IBRs by FERC's November 4, 2024 deadline. Upon making the requisite finding, the Board directed the SC to work with NERC Staff to convene a technical conference to gather input from industry to address the outstanding issues, prepare a memorandum discussing the issues, use the input from the technical conference to revise the proposed standard, and re-ballot the proposed standard one additional time, with such

adjustments as needed to meet the 45-day deadline provided in Section 321.2.1 of the NERC Rules of Procedure.

The technical conference took place on September 4-5, 2024, and focused on unresolved issues raised by stakeholders raised during the PRC-029-1 comment periods. Details on issues addressed during the technical conference can be found in the memo linked below:

- Technical Conference Memo to the Board

Following the technical conference, a revised draft of proposed Reliability Standard PRC-029-1 was posted for a final comment period and additional ballot from September 17, 2024 through September 30, 2024. A non-binding poll was also conducted.

Reliability Standard PRC-024-4 was posted for a final ballot from September 25, 2024 through September 30, 2024.

The results of both ballots can be found on the project page and will be reviewed with the Board at the meeting.

Minority Issues

Following the technical conference, several entities expressed concern about the ability of their IBR equipment to meet the voltage and the most recently reduced frequency ride through performance requirements in proposed Reliability Standard PRC-029-1 without significant cost expenditures. Notably, they involved IBR that had not been designed to ride-through at the new proposed ride-through criteria, were already under contract to interconnect for several years, and would not be in-service prior to the effective date of PRC-029-1; meaning they would not qualify to seek exemption for voltage or frequency ride-through criteria. To address these concerns, modifications would be needed to Requirement R4 to include those IBR that are already under contract or to modify the Implementation Plan to allow for those IBR that are "in-service" beyond the current 12 months after the effective date of PRC-029-1. The SC and NERC staff declined to make such adjustments during the response to Rule 321 actions due to insufficient data available to evaluate potential impacts of allowing an additional and unknown amount of IBR to seek exemptions from ride-through criteria.

Additional issues discussed during the technical conference that did not result in modifications to PRC-029-1 concerned industry request for more clarity and compliance guidance for demonstrating IBR "design" capability, "hardware limitations", and identifying which equipment were the cause of the hardware limitations. The SC and NERC discussed this issue during their post-technical conference industry webinar.[5] Webinar attendees were advised that the requirement language was objective-based and that specific facts and circumstances for how to demonstrate compliance were beyond the scope of a standards development project.

Pertinent FERC Directives

FERC Order No. 901 paragraphs 190, 193, 199, 208, 209, 226.

Cost Effectiveness

[5] See "Standards Committee & NERC Generator Ride-through (PRC-029-1) Industry Webinar" materials; (September 19, 2024); available here.

The drafting team sought stakeholder input on the cost effectiveness of the proposed Reliability Standard (PRC-029-1) during the formal comment periods and the SC and NERC Ride-through Technical Conference. As outlined as a minority issue, there are anticipated to be some IBR with long lead times prior to interconnecting (approximately five to seven years) that will be subject to expensive redesign and retrofitting. In some cases, additional real estate could be needed at a facility to install additional equipment which could add years to the interconnection process for those facilities.

Additional Information

A link to the project history and files is included here for reference:
[Project 2020-02 Modifications to PRC-024 (Generator Ride-through)]

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Standards Actions

Soo Jin Kim, Vice President of Engineering, Standards and PRISM
Board of Trustees Meeting
October 8, 2024

RELIABILITY | RESILIENCE | SECURITY




Project 2020-02 Modifications to PRC-024 (Generator Ride-through)

- **PRC-024-4**
  - Final Ballot – 9/30/2024
    - Results will be announced at the Board Meeting
- **PRC-029-1**
  - Rule 321 Re-Ballot – 10/04/2024
    - Results will be announced at the Board Meeting

Project 2020-02 Modifications to PRC-024 (Generator Ride-through)

- **Revisions for PRC-024**
  - Modify: exclude IBR, add Type 1 and Type 2 Wind and other conforming adjustments
- **Revisions for PRC-029**
  - New: Frequency and Voltage Ride-through Requirements for Inverter-based Resources
  - Create performance-based requirements for ride-through
- **Reliability Benefit**
  - Closes identified gap of IBR failing to ride-through system disturbances

Project 2020-02 Modifications to PRC-024 (Generator Ride-through)

Action - Adopt

- **Reliability Standard - PRC-024-4** – Frequency and Voltage Protection Settings for Synchronous Generators, Type 1 and Type 2 Wind Resources, and Synchronous Condensers
- **Reliability Standard - PRC-029-1** – Frequency and Voltage Ride-through Requirements for Inverter-based Resources
- **Defined Term – "Ride-through"**

Questions and Answers

Project 2021-04 Modifications to PRC-002

Action

Adopt the following standards documents and authorize staff to file with applicable regulatory authorities:

- Reliability Standard – PRC-002-5 - Disturbance Monitoring and Reporting Requirements
  - [PRC-002-5 Standard] [Redline to last approved]
- Reliability Standard – PRC-028-1 - Disturbance Monitoring and Reporting Requirements for Inverter-Based Resources
  - [PRC-028-1 Standard]
- Implementation Plan
  - [PRC-002-5/PRC-028-1 Implementation Plan]
- Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs)
  - [VRF VSL Justification - PRC-002-5]
  - [VRF VSL Justification - PRC-028-1]
- Retirement
  - [Reliability Standard – PRC-002-4 - Disturbance Monitoring and Reporting Requirements]

Background

NERC initiated Project 2021-04 Modifications to PRC-002 in 2021 to address two standards authorization requests related to the PRC-002 standard, with development to proceed in two phases. The first phase, addressing a request to clarify requirements for Fault Recorder data, was completed in December 2022 with the development of Reliability Standard PRC-002-4. Proposed Reliability Standards PRC-002-5 and PRC-028-1 represent the conclusion of the second phase of work to establish disturbance monitoring requirements for IBRs.

In 2020, the NERC Inverter-Based Resource Performance Subcommittee (IRPS) published a white paper[1] summarizing the results of its review of NERC Reliability Standards, a review which it had undertaken to determine if there were opportunities to address gaps or otherwise improve the standards to assure reliability in light of the unprecedented growth of IBRs on the bulk power system. Among other things, the (IRPS, previously known as the IRPTF) recommended revising the PRC-002 Reliability Standard to address the lack of disturbance monitoring data available from IBRs, noting that this lack of data has led to difficulty in adequately assessing system events involving IBRs, including the Blue Cut Fire and Canyon 2 Fire events. The IRPS submitted a Standard Authorization Request to address this recommendation.

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[1] NERC IRPTF, IRPTF Review of NERC Reliability Standards (Mar. 2020), https://www.nerc.com/comm/PC/InverterBased%20Resource%20Performance%20Task%20Force%20IRPT/Review_of_NERC_Reliability_Standards_White_Paper.pdf [hereinafter "IRPTF White Paper"].

In October 2023, while work was underway to address the IRPS's recommendation, the U.S. Federal Energy Regulatory Commission (FERC) issued Order No. 901.[2] In Order No. 901, FERC directed NERC to develop new or modified Reliability Standards addressing reliability concerns related to IBRs "all stages of interconnection, planning, and operations,"[3] and to submit them to FERC on a three-year, staggered timeframe. For the first set, FERC directed the development of new or modified Reliability Standards that address IBR performance requirements, disturbance monitoring data sharing, and post-event performance validation for registered IBRs.[4] In January 2024, NERC submitted a filing to FERC outlining a comprehensive work plan to address the directives within Order No. 901.[5] Within the work plan, NERC identified three active standards development projects that would need to be filed for regulatory approval with FERC by November 4, 2024. These projects include Project 2020-02 Modifications to PRC-024 (Generation Ride Through); Project 2021-04 (Modifications to PRC-002); and Project 2023-02 (Analysis and Mitigation of BES Inverter-Based Resource Performance Issues).

Accordingly, proposed Reliability Standards PRC-028-1 and PRC-002-5 were aligned with the associated regulatory directives from Order No. 901 related to disturbance monitoring requirements for registered IBRs under "Milestone 2" of NERC's Order No. 901 Work Plan.

Summary

In addressing the FERC Order No. 901 directives and IRPS SAR, the drafting team created a new Reliability Standard PRC-028-1, to extend comprehensive disturbance monitoring and reporting requirements to IBRs. These requirements are informed by, and reflective of, the unique characteristics of IBRs, and address the items directed by FERC in Order No. 901.

As directed by FERC, the proposed standard includes as applicable entities both the Generator Owners owning Bulk Electric System IBRs that are currently registered with NERC, as well as the Generator Owners of non-bulk electric system IBRs that meet the technical criteria established in the recently approved revisions to the NERC Rules of Procedure registry criteria for Generator Owners.

Proposed Reliability Standard PRC-002-5 reflects revisions to clarify that standard's continued applicability and focus on synchronous Bulk Electric System generating resources, specifically excluding IBRs which are subject to proposed Reliability Standard PRC-028-1.

Together, the proposed Reliability Standards will help ensure that system operators will have adequate data from both synchronous generating resources and IBRs to facilitate the analysis of disturbances on the Bulk-Power System. Having such data is necessary for system engineers to better understand the root causes and effects of large system disturbances and take the appropriate actions to protect system reliability.

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[2] Order No. 901, *Reliability Standards to Address Inverter-Based Resources*, 185 FERC ¶ 61,042 (2023) [hereinafter Order No. 901].

[3] *Id.* at P 25.

[4] "Registered IBRs" refers currently registered IBRs, as well as IBRs that will be registered under the recently approved revisions to the NERC Rules of Procedure registry criteria for Generator Owner and Generator Operator.

[5] *Informational Filing of NERC Regarding the Development Reliability Standards Responsive to Order No. 901*, Docket No. RM22-12-000 (Jan. 17, 2024), available here.

Proposed Reliability Standard PRC-028-1 will also help ensure adequate data is available from IBRs to evaluate IBR ride-through performance during system disturbances and to provide data to inform IBR model validation efforts.

Standards Development Process

The proposed Reliability Standards PRC-002-5 and PRC-028-1 were posted for an initial 45-day formal comment period and ballot from August 1, 2023 to September 14, 2023. Both PRC-002-5 and PRC-028-1 failed at 61.44% with 87.96% quorum and 43.33% with 87.41 % quorum respectively. The proposed joint Implementation Plan failed at 42.96% and 87.23% quorum. The non-binding poll results were 54.45% with 86.09% quorum for PRC-002-5 and 28.07% with 85.44% quorum for PRC-028-1.

On December 13, 2023, the Standards Committee granted the drafting team's request for waiver due to regulatory deadlines. The waiver provided the following: (1) additional formal comment and ballot period(s) reduced from 45 days to as few as 15 calendar days, with ballot(s) and non-binding poll(s) conducted during the last 10 days of the comment period; and (2) final ballot reduced from 10 days to as few as 5 calendar days.

The standard drafting team conducted an additional 25-day formal comment and ballot from March 18 to April 11, 2024. From the second posting, PRC-002-5 received 79.46% supportive from the industry with 89.42%quorum while PRC-028-1 only received 50.03% support with 89.26 % quorum. The proposed joint Implementation Plan received 66.61% and 87.96% quorum. The non-binding poll results were 77.96% with 84.96 quorum for PRC-002-5 and 44.83% with 86.59% quorum for PRC-028-1.

The standard drafting team conducted an additional 15-day formal comment and ballot from May 31 to June 14, 2024, then extended to June 17, 2024 to reach quorum. The third ballot for PRC-002-5 received a 77.13% approval and 79.93% quorum. The third ballot for PRC-028-1 received a 46.77% approval and 79.26 % quorum. The proposed joint Implementation Plan receiving 62.60% approval and 78.02% quorum. The non-binding results were 79.88 % with 75.56 % quorum for PRC-002-5 and 48.15 % with 76.63 % quorum for PRC-028-1.

The standard drafting team conducted an additional 22-day formal comment and ballot from July 22 to August 12, 2024 just for PRC-028-1 since PRC-002-5 passed for the last two rounds. The fourth ballot received 80.70% approval and 87.04% quorum, with the proposed implementation plan receiving 84.55% approval and 85.04% quorum. The non-binding polls results were 77.51% supportive opinions with 86.59% quorum.

The standard drafting team conducted a 7-day final ballot from September 12, 2024 to September 18, 2024. The final ballot for the proposed Standards received 84.2% approval and 83.21% quorum for PRC-002-5 while PRC-028-1 received 83.85% approval and 88.52% quorum. The Implementation Plan received 84.63% approval and 86.86% quorum.

Minority Issues

None.

Pertinent FERC Directives

FERC Order 901, paragraphs 85 (directives for standards modifications), 86 (directives to consider comments from rulemaking proceeding), 226 (directives for implementation by 2030).

Cost Effectiveness

In developing proposed Reliability Standard PRC-028-1, the standard drafting team balanced concerns regarding the burden on Generator Owners owning applicable IBRs and the benefits to reliability from disturbance monitoring requirements. If new disturbance monitoring equipment is required, the approximate cost would be $50,000 to $100,000 per installation unless the existing equipment is set up for monitoring and storage. No impacts are anticipated from the clarifying revisions in proposed Reliability Standard PRC-002-5.

Additional Information

A link to the project history and files is included here for reference:
Project 2021-04 Modifications to PRC-002

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Actions

Soo Jin Kim, Vice President of Engineering, Standards and PRISM
Board of Trustees Meeting
October 8, 2024

RELIABILITY | RESILIENCE | SECURITY



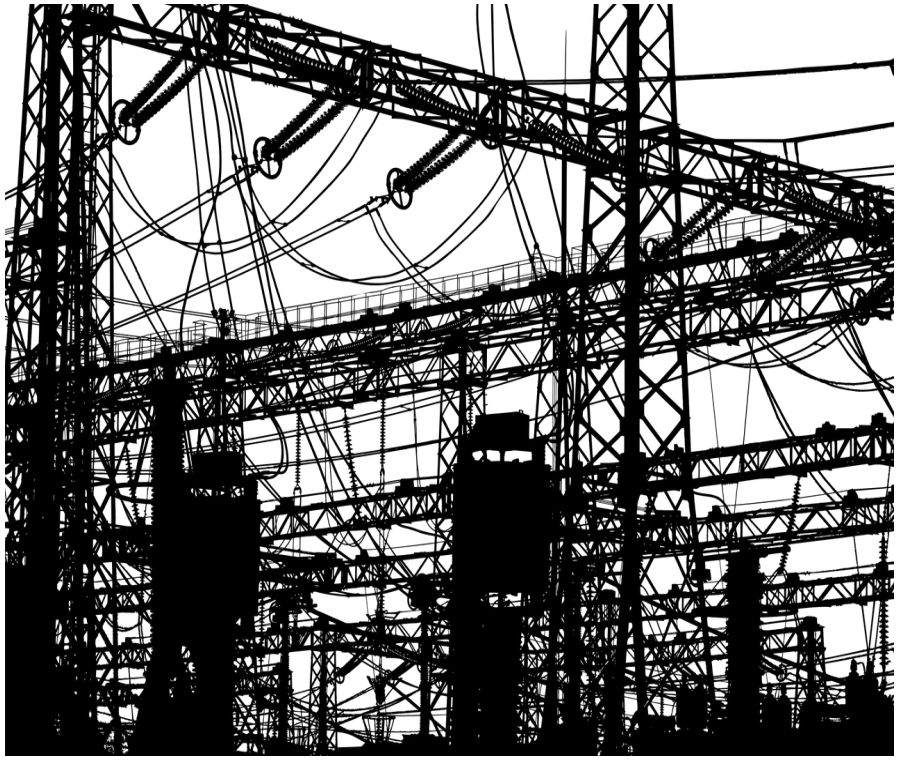

Project 2021-04 Modifications to PRC-002

Phase I SAR in Dec 2022

- 96.4% - PRC-002-4

Phase II SAR combined with FERC Order 901

- 84.20% - PRC-002-5
- 83.85% - PRC-028-1



Project 2021-04 Modifications to PRC-002

- **Revisions for PRC-002**
  - Modify: exclude IBR and other conforming adjustments
- **Revisions for PRC-028**
  - New: Disturbance Monitoring and Reporting Requirements for Inverter-Based Resources
- Assure sufficient high speed monitoring equipment installed
- **Reliability Benefit**
  - Ability to evaluate performance during system disturbances

Project 2021-04 Modifications to PRC-002

Action - Adopt

- Reliability Standard - PRC-002-5 – Disturbance Monitoring and Reporting Requirements
- Reliability Standard - PRC-028-1 – Disturbance Monitoring and Reporting Requirements for Inverter-Based Resources

Questions and Answers

Project 2023-02 Analysis and Mitigation of BES Inverter-Based Resource Performance Issues

Action

Adopt the following standard documents and authorize staff to file with the applicable regulatory authorities:

- Reliability Standard – PRC-030-1 – Unexpected Inverter-Based Resource Event Mitigation
  - [PRC-030-1 Standard]
- Implementation Plan
  - [Implementation Plan]
- Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs)
  - [VRF VSL Justification]

Background

Project 2023-02, Analysis and Mitigation of BES Inverter-Based Resource Performance Issues commenced development in response to multiple NERC disturbance reports,[1] including the Odessa disturbance report,[2] that identified the undesired performance of Bulk-Power System (BPS)-connected IBR during grid faults and detailed the systemic and significant BPS reliability risks that this undesired performance may pose.

On October 19, 2023, the Federal Energy Regulatory Commission (FERC) issued Order No. 901.[3] In Order No. 901, FERC directed NERC to develop new or revised Reliability Standards addressing reliability concerns related to IBRs "all stages of interconnection, planning, and operations,"[4] and to submit them to FERC on a three-year, staggered timeframe. For the first set, FERC directed the development of new or modified Reliability Standards that address IBR performance requirements, disturbance monitoring data sharing, and post-event performance validation for registered IBRs.[5] In January 2024, NERC submitted a filing to FERC outlining a comprehensive work plan to address the directives within Order No. 901. Within the work plan, NERC identified three active standards development projects that would need to be filed for regulatory approval with FERC by November 4, 2024. These projects include: Project 2020-02 Modifications to PRC-024 (Generation Ride Through); Project 2021-04 (Modifications to PRC-002); and Project 2023-02 (Analysis and Mitigation of BES Inverter-Based Resource Performance Issues).

Accordingly, proposed Reliability Standard PRC-030-1 was aligned with associated regulatory directives from Order No. 901 and the scope of other projects related to "Milestone 2" of the NERC work plan.

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[1] *See* https://www.nerc.com/pa/rrm/ea/Pages/Major-Event-Reports.aspx.

[2] *See* https://www.nerc.com/pa/rrm/ea/Pages/May-June-2021-Odessa-Disturbance.aspx.

[3] *Reliability Standards to Address Inverter-Based Resources Final Rule,* Order No. 901, 185 FERC ¶ 61,042 (2023).

[4] *Id.* at P 25.

[5] "Registered IBRs" refers currently registered IBRs, as well as IBRs that will be registered under the recently approved revisions to the NERC Rules of Procedure registry criteria for Generator Owner and Generator Operator.

Summary

Proposed Reliability Standard PRC-030-1 would be a new Reliability Standard that would require a Generator Owner to identify, analyze, and mitigate IBR performance issues. Specifically, Reliability Standard PRC-030-1 would include four Requirements for Generator Owners (GOs)to: (1) define how events are to be identified, along with exceptions that should not be identified; (2) analyze identified events; (3) create a Corrective Action Plan or technical justification when corrective actions are needed; and (4) mitigate performance risk through Corrective Action Plan implementation.

As directed by FERC, the proposed standard includes as applicable entities both the GOs owning bulk electric system IBRs that are currently registered with NERC, as well as the GOs of non-bulk electric system IBRs that meet the technical criteria established in the recently approved revisions to the NERC Rules of Procedure registry criteria for GOs.

Standards Development Process

On December 13, 2023, the Standards Committee granted the drafting team's request for waiver due to regulatory deadlines. The waiver provided the following: (1) initial formal comment and ballot period reduced from 45 days to as few as 25 calendar days, with ballot pools formed in the first 10 days, and initial ballot and non-binding poll of VRFs and VSLs conducted during the last 10 days of the comment period; (2) additional formal comment and ballot period(s) reduced from 45 days to as few as 15 calendar days, with ballot(s) and non-binding poll(s) conducted during the last 10 days of the comment period; and (3) final ballot reduced from 10 days to as few as 5 calendar days.

For the initial posting, the drafting team proposed new Reliability Standard PRC-030-1. A proposed draft of PRC-030-1 was posted for an initial formal comment period and ballot from March 25, 2024 – April 18, 2024. The initial draft failed to achieve the required ballot body approval with an approval rating of 21.19% and quorum of 92.78%. The non-binding polls for the VRFs and VSLs received 13.11% supportive opinions with 90.08% quorum. The Implementation Plan received an approval rating of 30.6% and achieved quorum with 92.81%.

A second draft of proposed Reliability Standard PRC-030-1 was posted for an additional formal comment period and ballot from June 7, 2024 to July 10, 2024. The additional ballot failed to achieve the required ballot body approval, with an approval 31.44% rating of and quorum of 81.95%. The non-binding polls for the VRFs and VSLs received 24.68% supportive opinions with 78.63% quorum. The Implementation Plan received approval rating of 41.5% and achieved quorum with 81.65%.

A third draft of proposed Reliability Standard PRC-030-1 was posted for an additional formal comment period and ballot from July 22, 2024 to August 12, 2024. The additional ballot passed with an approval rating of 76.11% and quorum of 90.61%, Implementation Plan received approval rating of 85.2% and achieved quorum with 89.93%, with the non-binding polls receiving 70.55% supportive opinions with 90.08% quorum; however, due to the need for substantive edits to the Implementation Plan, Project 2023-02 was posted for a 15-day additional formal comment period and ballot from August 28, 2024 to September 13, 2024. The standard passed the additional ballot with a 69.73% approval and quorum of 88.09%. The Implementation Plan passed with a 74.56% approval and 88.13% quorum. The non-binding polls for the VRSs and VSLs received 63.25% supportive opinions with 85.5% quorum. Based on these non-binding poll results, the

VSLs were revised to better reflect the associated requirement language and NERC and FERC guidelines for their assignment.

The final-day five ballot was conducted September 23, 2024 – September 27, 2024. The results can be found on the project page and will be reviewed with the Board at the meeting.

Minority Issues

Based on the comments received, some GOs believed that asking them to perform analysis in 90 days and create and implement a Corrective Action Plan in 60 days was overly burdensome, and that more time should have been allotted to perform analysis.

Pertinent FERC Directives

FERC Order No. 901, paragraph 208 ("require generator owners to communicate to the relevant planning coordinators, transmission planners, reliability coordinators, transmission operators, and balancing authorities the actual post-disturbance ramp rates and the ramp rates to meet expected dispatch levels (i.e., generation-load balance)."

Cost Effectiveness

The drafting team sought stakeholder input on the cost effectiveness of the proposed Reliability Standard (PRC-030-1) during the formal comment periods. Several commenters stated that they would require more information to assess the cost effectiveness of the approach. Some commenters expressed that applying this detailed monitoring and analysis the subsections of the North American electric grid where it is most needed would be more cost effective than requiring it across the entire geographic area.

Additional Information

A link to the project history and files is included here for reference:
[Project 2023-02 Analysis and Mitigation of BES Inverter-Based Resource Performance Issues]

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Actions

Soo Jin Kim, Vice President of Engineering, Standards and PRISM
Board of Trustees Meeting
October 8, 2024

RELIABILITY | RESILIENCE | SECURITY




Project 2023-02 Analysis and Mitigation of BES Inverter-Based Resource Performance Issues

IPRS SAR and FERC Order 901

- Final Ballot closing on September 27, 2024
  - Results
    - Standard 70.88% approval/90.65% quorum
    - Implementation Plan 74.78%approval/90.65% quorum

Project 2023-02 Analysis and Mitigation of BES Inverter-Based Resource Performance Issues

- **Revisions for PRC-004**
  - Originally in scope – No changes
- **Revisions for PRC-030**
  - New: Unexpected Inverter-Based Resource Event Mitigation
  - Require analyses of performance
- **Reliability Benefit**
  - Ability to quickly evaluate poor performance
  - Ability to initiate Corrective Action Plans

Project 2023-02 Analysis and Mitigation of BES Inverter-Based Resource Performance Issues

Action - Adopt

- Reliability Standard - PRC-030-1 – Unexpected Inverter-Based Resource Event Mitigation

Questions and Answers