

NERC News

April 2022

Inside This Issue

Compliance

[Webinar Resources Posted](#)

Event Analysis, Reliability Assessment, and Performance Analysis

[Webinar Resources Posted](#)

[Lessons Learned Posted](#)

Standards

[Webinar Resources Posted](#)

[Upcoming Events](#)

[Regional Entity Events](#)

[Filings](#) | [Careers](#)

ERO Executive Spotlight – Janet Sena, Senior Vice President of External Affairs, NERC

Purposeful Engagement across Jurisdictions is Key to Our Success

Today, more than ever, the future of a reliable, resilient and secure bulk power system depends upon our success in strengthening engagement across the entire stakeholder community. Our stakeholders are diverse and face increasing operational challenges, which are compounded further by the additional complexities that emerge at the intersection of federal and state jurisdictions.



To foster dialogue and understanding and to help mitigate these risks, NERC and the Regional Entities must have deliberate, purposeful engagement, not only with federal policymakers, but also with those at the state and provincial levels. Consequently, over the past 18 months, the ERO Enterprise has undertaken a renewed focus on state outreach.

To put simply, reliability needs are growing in number and complexity as the grid transforms at an extraordinary rate. Increasingly, state and provincial policies are

Headlines

[Robb to Participate in CAMPUT Annual Conference](#)

[Joint Technical Conference Focuses on Follow-up to February 2021 Cold Weather Outage Report](#)

[Noess Named WECC Vice President of Oversight](#)

[GridEx VI Report: Operational Communication, Collaboration and Coordination Key to Success during an Event](#)

[Industry Experts Author Paper on Climate Change Impacts to the Grid](#)

[Report Highlights Criticality of Ensuring Reliable Operation of Inverter-Based Resources; Provides Recommendations](#)

(Cont'd)

key drivers of this transformation, requiring greater collaboration at the nexus where bulk power system reliability intersects with state and provincial jurisdictions.

The states and provinces have exclusive domain over the generation resource base, which is undergoing rapid deployment of renewable resources, and increased usage of natural gas and energy storage. On distribution systems, distributed generation is another growing trend. Climate change impacts are driving states and provinces toward system resilience investments. In different but often related ways, these trends have myriad impacts on bulk power system reliability — impacts that state, provincial and federal regulators must understand and factor into their decision-making.

Transmission policy is another critical area where jurisdictions intersect. It is widely understood that decarbonization of the electricity sector requires massive investment in new transmission — a challenge that has vexed federal and non-federal policymakers for decades. Progress on this front requires continued engagement between federal and non-federal regulators with a keen focus on reliability needs.

Recognizing the need for purposeful, heightened engagement with states and provinces, NERC and the Regional Entities have come together and formed a joint collaboration team called the ERO Enterprise State Outreach Group, which also encompasses the provinces. The team leverages the ERO Enterprise model and capitalizes upon the respective strengths of NERC and the Regional Entities to communicate the key messages to policymakers around reliability risks.

Under this model, NERC and the Regional Entities generate harmonized messages to external audiences around assessments and public reports. NERC focuses on communication with national organizations, such as the National Association of Regulatory Utility Commissioners (NARUC), Canadian Association of Members of Public

Utility Tribunals, National Governors Association, National Conference of State Legislatures, and the

National Association of State Energy Officials. The Regional Entities engage with their state commissions, governors, legislatures, and state regulator groups organized around the NARUC regions and the different regional transmission organizations/independent system operators. In this way, NERC delivers the major messages around its seasonal and periodic assessments, and Regional Entities supplement that message with issues of regional importance informed by their unique perspectives. Engagements focus only on reliability topics, not on individual registered entities.

Some of the most productive engagements occur when NERC and the Regional Entities collaborate jointly. In January, Jim Robb, NERC's president and CEO, and Tim Gallagher, ReliabilityFirst's president and CEO, briefed the Indiana State Senate Utilities Committee on the findings of NERC's [2021 Long-Term Reliability Assessment](#) and [The February 2021 Cold Weather Outages in Texas and the South Central United States](#). Robb provided the North American perspectives and Gallagher focused on regional priorities and topics. The committee chair organized the briefing after reading about NERC's technical work. As the independent voice for reliability, this collaboration underscores the value that policymakers place on our work.

To better connect with policymakers, NERC is also working to deliver messages in ways that are more effective. One such innovation is the creation of infographics depicting NERC's periodic and seasonal assessments. These one-page summaries condense complex issues into key messages, delivered clearly and effectively, in a format that is easily accessible to both policymakers and the general public. These infographics are shared with the Regional Entities and distributed with the assessment announcement to external audiences, facilitating harmonized messaging and generating increased awareness of the ERO Enterprise's work. The Regional Entities have done an outstanding job using these assessments to enhance their connection with state policymakers related to reliability further. NERC External Affairs supports these efforts and, together, the ERO Enterprise State Outreach Group is spreading the message about the value of the ERO model and technical expertise to these key audiences.

While the ERO model has many tools to mitigate risks, engaging and educating policymakers of differing jurisdictions is necessary to create a common understanding of the most complex challenges. Fortunately, policymakers welcome the engagement because they appreciate the ERO Enterprise's solid reputation for independence and technical expertise. Such engagement is a key ingredient for making reliability the central priority that it must be to support transformation successfully.



Headlines

Robb to Participate in CAMPUT Annual Conference

Jim Robb, NERC's president and CEO, will participate in CAMPUT's 2022 Annual Conference, "Deep Dive into Disruption," on May 1–4 in Vancouver, Canada. Robb will participate on a panel—"The Future of Gas"—at 3:00 p.m. Pacific on May 2. The panel, moderated by David Morton, chair and CEO of the British Columbia Utilities Commission and chair of CAMPUT and co-chair of International Affairs, will discuss the future role of gas in decreasing greenhouse gases and its contribution to carbon neutrality. Robb will provide NERC's perspective on the reliability role gas plays in grid transformation. [CAMPUT 2022 Annual Conference Registration and Agenda](#)

Joint Technical Conference Focuses on Follow-up to February 2021 Cold Weather Outage Report

FERC, NERC and the Regional Entities hosted a technical conference, [Improving Winter-readiness of Generating Units](#), on April 27–28. The two-day conference followed on findings and recommendations highlighted in the FERC, NERC, and Regional Entity Staff Report published in November 2021, [The February 2021 Cold Weather Outages in Texas and the South Central United States](#). Participants from the electricity and natural gas industries, along with industry trade associations, discussed how to improve the winter readiness of generating units, including best practices, lessons learned and the increased use of NERC guidelines.

Noess Named WECC Vice President of Oversight

WECC announced that Steven Noess, NERC's former director of Regulatory Programs, is joining WECC as the new Vice President of Reliability and Security Oversight (Oversight). In his new role, Noess will oversee the continued development of a risk-informed Compliance Monitoring and Enforcement Program (CMEP) for WECC and manage the diverse teams within the Oversight department, including Entity Monitoring, Risk Assessment and Registration as well as Enforcement and Mitigation. As a member of WECC's executive team, Noess will share the responsibility for leading strategy, collaboration, transformation and engagement across the organization.

Industry Experts Author Paper on Climate Change Impacts to the Grid

Mark Lauby, NERC's senior vice president and chief engineer, co-authored and reviewed a report on the grid and climate change as part of IEEE's Power & Energy Society (PES) Industry Technical Support Leadership Committee (ITSLC). The report, [Importance of T&D Grid Modernization to Mitigate Impacts from and Adapt to Climate Change](#), discusses the significance of a modern, resilient grid as the foundation for a clean energy future. Global energy experts provided input into the report, which identifies practical solutions to enable stakeholders meet the emerging challenges associated with climate change. "Climate change impacts in the form of widespread, long-duration extreme weather events have affected the performance of the bulk power system and created increasing operational challenges over the past few years," said Lauby, who is also an IEEE Fellow. "This report is great example of how NERC works with the reliability ecosystem, in the form of industry experts, leveraging their shared knowledge and expertise to provide practical solutions to mitigate grid vulnerability." The changing resource mix, decarbonization of the grid, and increasingly extreme and unpredictable weather place an even greater emphasis on the need for a resilient and reliable bulk power system.

GridEx VI Report: Operational Communication, Collaboration and Coordination Key to Success during an Event

Enhancing routine and emergency operations coordination between the electricity industry and natural

gas providers is one of several recommendations identified during NERC and the Electricity Information Sharing and Analysis Center's (E-ISAC) sixth security exercise, GridEx VI, held in November 2021.

Communications, collaboration and coordination are among many policy recommendations highlighted in the [GridEx VI Lessons Learned Report](#) as being key to industry's success during a severe security event. The Report is a detailed post-exercise review and analysis that provides recommendations for actions by the electricity industry, cross-sector partners and government. Participants from across North America — including industry as well as U.S. and Canadian government partners — took part in the two-day exercise, which tested the operational and policy measures that would be needed to restore the grid following a severe cyber and physical attack.

Report Highlights Criticality of Ensuring Reliable Operation of Inverter-Based Resources; Provides Recommendations

The ongoing widespread reduction of solar photovoltaic (PV) resources continues to be a notable reliability risk to the bulk power system, particularly when combined with the loss of other generating resources on the bulk power system and in aggregate on the distribution system, a joint report from NERC and WECC found. Between June and August 2021, four disturbances involving widespread reduction of power from bulk power system-connected solar PV resources occurred in Southern California, specifically in areas of high penetrations of solar PV and wind resources. The [Multiple Solar PV Disturbances in CAISO Disturbances between June and August 2021: Joint NERC and WECC Staff Report](#) analyzes the initiating events and performance of the bulk power system-connected solar PV fleet during the events. The report also documents key findings and provides recommendations to industry for improved performance validation of the solar PV fleet and improved modeling and study practices to identify these issues before real-time operations.



Compliance

Webinar Resources Posted

NERC posted the [streaming recording](#) from the CIP Risk Factor Changes Informal Webinar.



Event Analysis, Reliability Assessment, and Performance Analysis

Webinar Resources Posted

NERC posted the [streaming webinar](#) and [slide presentation](#) from the Utilizing Excess Capability of BPS-Connected Inverter-Based Resources for Frequency Support Informational Webinar.

Lessons Learned Posted

NERC posted six new lessons learned document on the [Lessons Learned page](#). A successful lesson learned clearly identifies the lesson, contains sufficient information to understand the issues, visibly identifies the difference between the actual outcome and the desired outcome and includes an accurate sequence of events, when it provides clarity.

The [DER Performance During a Disturbance](#) Lesson Learned addresses an incident in which a three-phase-to-ground fault resulted in two 500 kV circuits being removed from service. This led to a net loss of approximately 1,300 MW of voltage-sensitive loads as well as at least 300 MW of supply from distributed energy resources. This document is of primary interest to Generator Owners, Generator Operators, Transmission Owners and Transmission Operators.

The [Islanding and Insufficient Primary Frequency Response Resulted in Unintended UFLS](#) Lesson Learned addresses an incident in which an entity separated from the Interconnection and experienced an underfrequency event. Upon reviewing the islanded system's response to the underfrequency event, the entity discovered that the generator response was not as expected in a number of instances along with other contributing factors, such as low system inertia and inadequate pre-arranged load shedding. This document is of primary interest to Balancing Authorities, Generator Owners, Generator

Operators, Transmission Owners and Transmission Operators.

The [Model Data Error Impacts SE and RTCA](#) Lesson Learned addresses an incident in which state estimator (SE) and real-time contingency analysis (RTCA) systems experienced a software issue post network model deployment that resulted in a questionable solution. The solution quality issue was the result of a software problem that allowed the SE to continue to solve with telemetered MW/MVAR data that had stopped updating. This document is of primary interest to Balancing Authorities, Transmission Operators, Transmission Owners who use SE/RTCA and Reliability Coordinators.

The [Substation Flooding Events Highlight Potential Design Deficiencies](#) Lesson Learned addresses an incident in which heavy rainfall of 5.7 inches of rain and hail over a 2.5 hour period led to the flooding of a basement relay room in the control building at a 230 kV transformer station. This led to unexpected equipment and protection operations during the event that resulted in two 230 kV

circuits and six generating units (representing a total of 495 MW) being removed from service over a period of 1 hour and 7 minutes. This document is of primary interest to Generator Owners, Generator Operators, Transmission Owners and Transmission Operators.

The [Unintended Consequences of Altering Protection System Wiring to Accommodate Failing Equipment](#) Lesson Learned addresses an incident in which, following standard entity practice on discovering a failing capacitor coupled voltage transformer (CCVT), the voltage sensing for the equipment protecting the CCVT line position was jumpered to a CCVT on a nearby line position, but the failing CCVT was left connected to the Bulk Electric System. The applied jumper provided a false indication of good sync voltage across the open breaker, causing the sync-check relays in the reclosing system to close the breakers into a permanent fault multiple times in rapid succession. This in turn caused relay operations at three non-faulted line terminals that were determined to be misoperations. This document is of primary interest to Substation Maintenance Groups, Substation Design

Groups, Transmission Owners and Transmission Operators.

The [Intermittent Network Connection Causes EMS Disruption](#) Lesson Learned addresses an incident in which intermittent disruptions of the primary network path connectivity at a backup control center that resulted in loss of access to the energy management system and voice over internet protocol (VoIP) for 25 minutes. It is of primary interest to Reliability Coordinators, Balancing Authorities, Transmission Operators and Transmission Owners.



Standards

Webinar Resources Posted

NERC posted the [streaming webinar](#) and [slide presentation](#) from the Project 2020-06 – Verifications of Models and Data for Generators Industry Webinar.



Upcoming Events

For a full schedule of NERC events, such as meetings and conference calls for standard drafting teams, other standing committees, subcommittees, task forces and working groups, please refer to the [NERC calendar](#).

- **NERC–NATF–NAGF–EPRI Joint Webinar | IEEE 2800-2022 Update: Standard for Interconnection and Interoperability of Inverter-Based Resources Interconnecting with Associated Transmission Systems** – 12:00–1:30 p.m. Eastern, May 3, 2022 | [Register](#) | [Agenda](#)
- **[Multiple Solar PV Disturbances in CAISO Disturbances between June and August 2021: Joint NERC and WECC Staff Report](#) Informational Webinar** – 1:00–3:00 p.m. Eastern, May 10, 2022 | [Register](#)
- **Board of Trustees Committees, Member Representatives Committee, and Board of Trustees Meetings** – May 11–12, 2022, Arlington, Virginia | [Register](#)



Regional Entity Events

Midwest Reliability Organization (MRO)

- [MRO Protective Relay Subgroup Q2 Meeting](#), May 3
- [MRO Annual Reliability Conference](#), May 18
- [MRO Reliability Advisory Council 2Q Meeting](#), May 19

ReliabilityFirst Corporation

- [Technical Talk with RF](#), May 16
- [Technical Talk with RF](#), June 20
- [Technical Talk with RF](#), July 18

SERC Reliability Corporation

- [Natural Gas Electric Coordination Vision for the Future](#), May 17
- [The Scoop on Ransomware](#), June 15
- [SERC Risk Committee Meeting](#), June 22
- [SERC Board of Directors Meeting](#), June 23

Texas RE

- [Talk with Texas RE: FAC-008](#), May 5
- [Talk with Texas RE: FERC and ERO Enterprise Joint Review of Protection System Commissioning Programs Report](#), May 10
- [Talk with Texas RE: Battery Storage in the Texas Interconnection](#), May 19
- [Talk with Texas RE: Summer Outlook](#), May 31

WECC

- [Joint Guidance Committee Meeting](#), May 6
- [Compliance Open Webinar](#), May 19
- [Summer Readiness Series](#), May 24
- [Summer Readiness Series - Part Two](#), May 25
- [Reliability Assessment Committee Meeting](#), May 26



Filings

NERC Filings to FERC in April

[Reply Comments to Public Citizen](#) | April 26

NERC submits reply comments to comments by Public Citizen, Inc. in response to NERC's petition for approval of

modifications to NERC's Rules of Procedure regarding Reliability Standards.

[ERO Enterprise Joint Comments on DLR NOI](#) | April 25
NERC and the Regional Entities submitted joint comments on FERC's Notice of Inquiry regarding the Implementation of Dynamic Line Ratings.

[Joint Reply of NERC and NPCC](#) | April 6
NERC and NPCC submitted reply comments addressing comments of Public Citizen Inc. filed in response to March 11, 2022 petition for approval of amendments to NPCC Bylaws.

There were no NERC Canadian Filings April.



Careers at NERC

Electricity Sector OT Cyber Security Specialist

Location: Atlanta

[Details](#)

Data Science Advisor

Location: Atlanta

[Details](#)

