

NERC News

July 2020

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ERO Executive Spotlight – Tim Gallagher, President and CEO, ReliabilityFirst

Flipping the Model from Compliance to Excellence

I am grateful to everyone in our industry for their efforts to keep the lights on during the pandemic, but we cannot stop there. This unprecedented situation has highlighted the need for greater agility, increased collaboration and expanding our mindset beyond compliance. The pandemic has brought new risks and challenges with it and has made risks, such as cyber intrusions, more prominent.



Compliance with Reliability Standards will always be fundamental to our industry and our collective mission to maintain reliability, security and resilience. However, to achieve excellence, continuously improve and keep pace with risks as they emerge, we, as Regions and as an Electric Reliability Organization (ERO), recognize the need to shift from a primarily compliance-focused approach to one that incorporates holistic excellence. [Continued on page 2](#)

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Flipping the Model (cont'd)

What does this look like? Let me share a few recent ReliabilityFirst (RF) activities and initiatives aimed toward this goal of flipping the model from compliance to excellence.

Championing Internal Controls

An effective Internal Control Program can make operations more efficient, protect assets and assist in compliance with NERC standards and requirements. In February, RF hosted the ERO's first Internal Controls Workshop, which brought together more than 120 subject matter experts (SMEs) and their Primary Compliance Contacts from 53 different registered entities, as well as individuals from Regional Entities, NERC and FERC. In addition to targeted events and a recurring "Get Control of Yourself" newsletter column, RF is proud to be an integral part of the group establishing an ERO-wide Internal Controls Task Force.

Realigning Organizational Structure

Earlier this year, we made improvements to support RF's ongoing efforts to serve our registered entities and stakeholders more effectively. This included developing new functions, such as analytics and communications, as well as creating a Corporate Services and Entity Engagement department, headed by Vice President Rob Eckenrod. Emphasizing our proactive approach to ensuring work is risk-based; Jeff Craig leads reorganized teams focused on the assessment and analysis of risk in his new role as vice president of Reliability and Risk. Vice President and General Counsel Niki Schaefer now manages all CMEP activities.

Promoting Continuous Improvement

The bimonthly RF newsletter includes a wide variety of content that contributes to our risk-based approach to compliance. To further promote the relationship between compliance and continuous improvement, we introduced a new recurring column titled "Continuous Improvement – The Journey to Security, Resilience and Reliability." These articles complement the CIP topics covered in the longstanding "The Lighthouse" column.

Diversifying Outreach Content

We rebranded our regularly scheduled monthly compliance call to reflect better the breadth of value RF offers registered entities and stakeholders. Renamed "Technical Talk with RF," the call still takes place every third Monday of the month, is open to all registered entities and stakeholders and features the same great compliance-related content. To build upon this, we are expanding into other risk areas and engaging SMEs from other Regions to tackle risks such as cyber security, misoperations, situational awareness and more. The RF team is working hard to provide content that not only helps entities prepare for upcoming audits and spot checks, but also dives into the risks facing the RF footprint and ERO Enterprise.

We look forward to developing these efforts, creating even more ways to encourage industry excellence and, most importantly, doing so together as the ERO Enterprise. ■■■

Headlines

FERC, NERC Publish Guide to Identify Supply Chain Vendors

The Federal Energy Regulatory Commission (FERC) and NERC took a further step to protect the nation's electric infrastructure by publishing a [joint white paper](#) to help the electric sector identify vendors of components on their networks so that they can take any necessary action to mitigate potential risks to the bulk power system.

The electric sector relies on networking and telecommunications equipment to operate the bulk power system. This white paper identifies several noninvasive techniques that security professionals may use to identify vendors of a well-known and often-targeted component known as a network interface controller (NIC).

Multiple government sources — the House Permanent Select Committee on Intelligence, the Government Accountability Office, the Defense Innovation Board and the Federal Communications Commission — have

repeatedly identified Huawei and ZTE as potential threats. Due to the pervasiveness of companies like Huawei and ZTE in the marketplace, the electric sector may unknowingly be using devices that have the potential to compromise the electric grid.

While the report highlights noninvasive methods, industry may have other methods to identify foreign vendor equipment or components, security professionals may have other ways of finding these components. Industry should consider developing and implementing processes to not only identify such vendor suppliers, but to implement further processes to protect their supply chain that could be periodically re-performed and assessed against previous results. FERC and NERC have long focused on supply chain issues, including the development of standards, alerts and other efforts.

Supply chain risk management is critical to the reliable operation of the electric grid. FERC and NERC will continue to work together toward assuring the reliability and security of the North American bulk power system. [Joint Staff White Paper on Supply Chain Vendor Identification](#)

Grid Demonstrates Improved System Performance and Resilience in 2019

In the face of rapid, significant changes to the generation resource mix, the bulk power system continued to perform at a very high level of reliability in 2019, NERC's [2020 State of Reliability](#) found. Performance trends for generation and transmission as well as protection and control measures are positive, and metrics showed improvement in numerous areas. With appropriate insight, careful planning and continued support, the sector will continue to navigate the challenges in a manner that maintains reliability.

The report, which looks at performance during the previous year, identifies seven key findings, chiefly that 2019 was a year of high reliability with no Category 3, 4 or 5 events and only two Energy Emergency Alert (EEA) Level 3 conditions that led to firm load shedding of 250 MW.

"We continue to see high performance across many of the key reliability indicators," said John Moura, director

of Reliability Assessment and Technical Committees. "It is, however, key that the ERO Enterprise and industry continue improving our models and planning approaches in order to operate a system with a significantly different resource mix."

The report's other key findings include:

- In Texas, the projected capacity deficit remains a reliability risk in 2020; however, better than expected performance from the generation fleet helped meet 2019 summer peak demand.
- Local energy-assured generation remains necessary for reliability.
- NERC and industry stakeholders are advancing solutions to the addition of more inverter-based resources.
- Frequency response improved or remained stable in all Interconnections.
- Protection System Misoperations rate continues to decline.
- There were no reportable cyber or physical security incidents in 2019.

The report's high-level recommendations include:

- System planners should evaluate the need for flexibility as conventional generation retirements are considered by industry and policymakers. Retirement planning studies should consider Interconnection-level impacts and sensitivity assessments associated with the loss of critical transmission paths and the loss of local generation in larger load pockets.
- The ERO and industry should develop comparative measurements and metrics to understand the different dimensions of resilience (e.g., withstanding the direct impact, managing through the event, recovering from the events, preparing for the next event) during the most extreme events and how system performance varies with changing conditions.
- The ERO and industry should continue to work closely together to understand and share information on cyber and physical security threats and mitigate the risks posed by these threats through a variety of approaches, including resilient system design, consequence-

informed planning and operation and practicing response and recovery processes.

As a core element of the ERO mission, NERC remains focused on identifying emerging risks in order to maintain a proactive posture to assure that the bulk power system remains highly reliable. To that end, the report also includes more detailed and tactical recommendations for each of the identified four high level risks from the [2019 ERO Reliability Risk Priorities Report](#). [State of Reliability 2020 Infographic](#)

NERC Staff to Present at IEEE Power & Energy Society General Meeting

On August 3–6, the Institute of Electrical and Electronics Engineers (IEEE) will host the virtual Power & Energy Society (PES) General Meeting, themed: “Are Big Data, Machine Learning and Electric Transportation Transforming the Grid?” This annual meeting brings together electric power and energy experts and stakeholders from across the globe to share the latest advancements in technology and ideas that will propel our future.

The below NERC staff will be presenting a number of peer-reviewed technical papers, as well as participating as panelists:

- Rich Bauer, *Associate Principal Engineer, Event Analysis*
- Svetlana Ekisheva, Ph.D., *Principal Data Science Advisor, Advanced System Analytics and Modeling*
- Howard Gugel, *Vice President, Engineering and Standards*
- Jack Norris, *Engineer II, Performance Analysis*
- Mohamed Osman, P.E., *Lead Engineer, Power Systems Analysis*
- Ryan Quint, Ph.D., P.E., *Senior Manager, BPS Security and Grid Transformation*
- Rachel Rieder, *Data Analyst, Performance Analysis*
- John Skeath, *Engineer II, Advanced System Analytics and Modeling*

“I am thrilled at the level of NERC staff participation in IEEE PES,” said Mark Lauby, IEEE Fellow and NERC’s senior vice president and chief engineer. “Their peer-reviewed contributions enrich the engineering field and further NERC’s reputation as a technical leader in the reliability and security of the bulk power system.”

This year, conference attendees will have exclusive access to more than 400 hours of conference material, including plenary, super and panel sessions, paper and poster sessions, a student poster competition, and tutorials. NERC is proud to be Bronze sponsor of this event, which furthers the PES mission to be the leading provider of scientific and engineering information on electric power and energy for the betterment of society.

Cancel Addresses NARUC Critical Infrastructure Committee

Manny Cancel, senior vice president of NERC and chief executive officer of the Electricity Information Sharing and Analysis Center (E-ISAC), participated in the National Association of Regulatory Utility Commissioners’ (NARUC) [Summer Policy Summit](#) on July 20–22. Cancel joined the Critical Infrastructure Committee’s session on “Managing Supply Chain Risks in Critical Energy Infrastructure,” which focused on supply chain security for the bulk power system and its potential implications for the distribution grid.

NERC Staff Presents at EEI Virtual Supply Chain Security Conference

On July 15, the Edison Electric Institute hosted a Virtual Supply Chain Security Conference from 11:30 a.m.–5:30 p.m. Eastern. This conference showcased industry and government leaders discussing new and emerging supply chain risk management practices. Howard Gugel, NERC’s vice president of Engineering and Standards, and Joe McClelland, director of the Office of Energy Infrastructure Security at the Federal Energy Regulatory Commission, presented “Supply Chain Regulation: Current State and On the Horizon.” Steve Herrin, director of Operations and Strategic Partnerships for the E-ISAC, Shawn Wallace from IronNet and Matthew Harvey from CrowdStrike Services presented “State of Supply Chain Threats: Industry Perspective.” Presentations from the conference are available. [EEI Virtual Supply Chain Security Conference Presentations](#)

Robb Speaks at FERC Technical Conference on COVID-19 Impacts

On Wednesday, July 8 and Thursday, July 9, FERC held a [technical conference](#) to consider the ongoing, serious impacts that the emergency conditions caused by COVID-19 are having on various segments of the United States' energy industry. Jim Robb, NERC's president and CEO, spoke on Panel 1: System Operations and Planning Challenges. Robb also addressed reliability and security dimensions of the ongoing pandemic.

The conference included multiple panels covering diverse issues, including:

- The energy industry's ongoing and potential future operational and planning challenges due to COVID-19 and as the situation evolves moving forward;
- The potential impacts of changes in electric demand on operations, planning and infrastructure development;
- The potential impacts of changes in natural gas and oil demand on operations, planning and infrastructure development; and
- Issues related to access to capital, including credit, liquidity and return on equity issues.



Compliance

Compliance Guidance Update

A key factor in the success of compliance monitoring and enforcement of mandatory standards rests on a common understanding among industry and ERO Enterprise CMEP staff of how they can achieve and demonstrate compliance. For many standards, this is straightforward. For others, a variety of approaches may achieve the same objective. Industry develops Implementation Guidance, for industry, and the guidance requires ERO Enterprise endorsement. This guidance provides examples for implementing a standard.

NERC posted three new proposed Implementation Guidance documents to [the NERC Compliance Guidance web page](#):

- [CIP-004-6 and CIP-011-2 Cloud Solutions and Encrypting BCSI \(NERC RSTC\)](#)

- [CIP-010-2 Configuration Change Management \(MRO CMEPAC\)](#)

NERC also posted one new and one revised CMEP Practice Guide:

- **NEW** [Determinations of Provision of Operating Plans from Transmission Operators and Balancing Authorities to Reliability Coordinators for TOP-002-4 R6 and R7](#): The purpose is to address how CMEP staff will assess provision of Operating Plans from Transmission Operators and Balancing Authorities to Reliability Coordinators when determining compliance with TOP-002-4 R6 and R7. Specifically, there is discussion about where an entity submits an Operating Plan for an identified period of time (such as the weekend, or until further notice).
- **REVISED** [Information to be Considered by CMEP Staff Regarding Inverter-Based Resources](#): This update adds a section on type 1 and type 2 wind turbines to page 4.

Reference Material Posted

In collaboration with National Institute of Standards and Technology (NIST) staff, NERC staff assessed and updated the [reference document](#) mapping NERC Critical Infrastructure Protection (CIP) Reliability Standards to the NIST Cybersecurity Framework (the Framework). The previous version of the mapping referenced now-retired NERC CIP Reliability Standards and a previous version of the Framework.

NERC CIP Reliability Standards are a set of requirements designed to mitigate cyber risks to North America's Bulk Electric System. They cover topics such as electronic security perimeters, the protection of Bulk Electric System Cyber Assets, personnel and training, security management, disaster recovery planning and supply chain risk management.

NIST's mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards and technology in ways that enhance economic security and improve our quality of life. As a part of its mission, NIST has developed standards, special publications and guidelines on various topics, including

cybersecurity. In February 2014, NIST published the original Cybersecurity Framework based on existing standards, guidelines and practices for reducing cybersecurity risks.

The Framework provides a prioritized, flexible, repeatable and cost-effective approach, including information security measures and controls to help owners and operators of critical infrastructure and other interested entities to identify, assess and manage cybersecurity-related risk while protecting business confidentiality, individual privacy and civil liberties. ■■■

Reliability Risk Management

One Lessons Learned Posted

NERC posted one new Lesson Learned to the [Lessons Learned](#) page.

The [Mixing Relay Technologies in DCB Schemes](#) Lesson Learned addresses multiple composite protection system misoperations that occurred on the Bulk Electric System as a result of mixing protective relay technologies at the remote terminals of directional comparison blocking (DCB) schemes. One of the most challenging mix of technologies is utilizing a relay system based on newer microprocessors (μP) at one terminal and an older electromechanical (EM) relay system at the opposite terminal. Utilizing different models of μP-based relays at each terminal can also be problematic. Often, only one terminal of a DCB system is upgraded to μP-based relays due to various reasons, including different ownership of terminals, budget constraints and emergency replacements. Relay timing and directional coordination is critical in DCB schemes that may be overlooked when relay technology or relay models vary between terminals. This Lesson Learned is of primary interest to Transmission Owners.

A successful Lesson Learned document 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. ■■■

Standards

With the implementation of the [Align Project](#) in 2020, there will be changes to the [Reliability Standards web page](#) and associated reports, including the One-Stop Shop, U.S. Effective Date Status/Functional Applicability spreadsheet and VRF and VSL matrices. More details will be provided in the coming months.

Align Project Update

The Align team collaborated with the Regional Entities to host testing exercises for select registered entities in July. These exercises provided registered entities with an opportunity to test and interact with entity-specific functionality for Release 1, including:

- Self-report, mitigation and enforcement-related workflows and business rules
- Registered entity dashboards
- Registered entity notifications

The Align team is hosting a series of adoption workshops through September to prepare NERC and Regional Entity staff for Release 1 pre-launch activities. In addition to offering direct interaction with the Align tool and a live Q&A, these workshops offer the opportunity to preview training materials, discuss access provisioning protocols and other business readiness activities. Additionally, the team will walk through the standardized ERO Enterprise CMEP business processes. This will help NERC and the Regional Entities identify any changes required to CMEP business processes as part of Release 1.

Please email AskAlign@nerc.net with any questions about the project or the activities mentioned above. The project team updates the [Align FAQs page](#) with answers to questions received on a weekly basis.

Webinar Resources Posted

NERC posted the [slide presentation](#) and [recording](#) for the Project 2015-09 – Establish and Communicate System Operating Limits webinar.

NERC posted the [slide presentation](#) and [recording](#) for the Project 2016-02 – Modifications to CIP Standards SuperESP webinar. ■■■

Regional Entity Events

Midwest Reliability Organization (MRO)

- [MRO Protective Relay Subgroup Meeting](#), August 11
- [Reliability Advisory Council Meeting](#), August 25
- [MRO Virtual Reliability Conference 2020](#), August 26
- [Organizational Group Oversight Committee OGO](#), September 16
- [CMEP Advisory Council Meeting](#), September 16
- [MRO Board of Directors Meeting](#), September 17

ReliabilityFirst (RF)

- [Third Quarter Board Meeting](#), August 13
- [Technical Talk with RF](#), August 17
- [6th Annual Protection System Workshop for Technical Personnel](#), August 18
- [Human Performance Improvement Overview Session](#), August 19
- [3rd Annual Human Performance Workshop](#), August 20
- [RF 2020 Fall Virtual Workshop](#), August 25

Texas RE

- **Reliability 101 Webinar Series**
 - [Why the Texas Reliability Monitor is Unique](#), August 4
 - [Initial Engagement Submissions](#), August 6
 - [Navigating Noncompliance Resolution](#), August 11
 - [NERC Data Collection, Events Analysis and Guidelines](#), August 14
- [ERCOT and Texas RE Generator Weatherization Workshop](#), September 3

WECC

- **Wildfire Webinar Series**
 - [Wildfires in the West](#), August 6
 - [Best Practices and Lessons Learned](#), August 13
 - [Compliance Open Webinar](#), August 20
- Annual Membership and Board of Directors Meetings (remote), September 9–10 ■■■

Upcoming Events

For a full accounting 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](#).

- **Project 2019-03 – Cyber Security Supply Chain Risks Webinar** – 1:00–2:30 p.m. Eastern, August 5 | [Register](#)
- **Project 2016-02 – Modifications to CIP Standards | Management Systems Webinar** – 1:00–2:00 p.m. Eastern, August 6 | [Register](#)
Board of Trustees Committees, Member Representatives Committee, Board of Trustees Meetings – August 19–20 | [Register](#) ■■■

Filings

NERC Filings to FERC in July

July 1, 2020

[Comments re Virtualization and Cloud Computing NOI](#) | NERC and the Regional Entities submit joint comments in response to FERC's Notice of Inquiry regarding the use of virtualization and cloud computing services.

NERC Canadian Filings to FERC in July

July 22, 2020

[Notice of Revised RDAs](#) | [WECC RDA Attachments](#) ■■■

Careers at NERC

E-ISAC Resilience and Policy Coordination Manager

Location: Washington, D.C.

[Details](#) ■■■