DECEMBER 2021

**“For last year’s words belong to last year’s language.
And next year’s words words await another voice.”**

- T.S. Eliot

MIDWEST RELIABILITY MATTERS

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CEO MESSAGE

End of Year Letter

A message of gratitude

As 2021 comes to a close, I cannot begin to thank MRO staff, our colleagues across the ERO Enterprise, and our registered entities enough for such strong support during what proved to be another tumultuous year. I know it has not been easy, but together, we continue to make the best of some very challenging situations. Thank you all for your extraordinary efforts!

This year has been a continuation of the uncertainty we experienced in 2020 as around the world communities grappled with the effects of a global health crisis. As I think about MRO's ongoing experience with the COVID-19 pandemic, I am so grateful for the hardworking, dedicated team of individuals I have the privilege of working with every day. MRO's Emergency Response Team—comprised of 13 individuals representing different areas of the company—has met 50 times since the onset of the pandemic. Placing a priority on the people that make our vision a reality, this team has guided MRO through some very difficult decisions about how best to operate under circumstances none of us could have predicted. The December Annual Member and Board Meeting marked two full years of remote meetings. While I have missed seeing you all in person, I continue to be impressed with how well we have adapted to this virtual environment (something I would not have thought possible pre-pandemic).

Added to the challenges presented by the pandemic was a severe weather event in February this year that tested the reliability and resiliency of the bulk power system in MRO's region. A significant amount of time and effort was dedicated throughout 2021 to determine the root causes of that event and identify what must be done to prevent recurrence. The ERO Enterprise, including MRO staff, teamed with FERC to review that event and publish a number of recommendations for industry. MRO considered those recommendations in its 2021 Regional Winter Assessment published in early December that provides a more focused look at resource adequacy and reliability risks most impactful to the MRO region. MRO's Reliability Advisory Council is providing outreach on reliability risks, including severe weather, to registered entities across the region in the coming months.

Also in 2021, we saw an alarming increase in cyber threats and vulnerabilities that posed significant risk to security of the bulk power system. This increase in threats required each of our organizations to not only remain vigilant against a variety of cyber actors, but to enhance our collective security posture by sharing information and best practices with other industry organizations across North America. MRO's Security Advisory Council and Security Threat Forum did exactly that—conducting a considerable amount of outreach in 2021 to respond to, mitigate, and prevent security risk. These efforts will continue to be a primary area of focus for MRO in 2022.

"Given what we have been through over the past two years, I am confident we will succeed, even under the most difficult circumstances."

Although 2021 presented significant challenges, I am extremely grateful for the efforts of MRO staff, the ERO Enterprise, our board and organizational groups, and the entire reliability community to rise to the occasion with courage, curiosity, commitment…and resilience. We don't know what next year will bring, but we do know that change is the one constant we all can rely on.

Given what we have been through over the past two years, I am confident we will succeed, even under the most difficult circumstances. However it is that you and your loved ones celebrate the holidays, I wish you good health, happiness, and prosperity in the year ahead.

Together, our future is bright!

-Sara Patrick, MRO President and CEO

Employee Spotlight

Please join us in weloming the following individuals to the MRO Team:

Farid Shallal joined MRO's IT Department as a cybersecurity specialist. Farid has several years of experience in the cybersecurity field and we look forward to adding his knowledge and expertise to the IT team!

Rebecca Schneider has joined MRO temporarily to assist with work in the Security Department. Rebecca has compliance and project management experience and we look forward to working with her.

MRO is Hiring!

You can view open positions and apply by visiting the Careers Page on our website or visit us on LinkedIn.

COMPLIANCE MONITORING AND ENFORCEMENT PROGRAM

ERO Enterprise Align and SEL Update

Release 3 of Align is now live in production! The project team completed acceptance testing and regression testing in October. The release was deployed to the Align training environment in November, and into the Align production environment in early December. Release 3 functionality consists of core capabilities for audits, audit planning, and scheduling. The regional adoption schedules and training plans for Release 3 are in development and will be announced later this month. Stay tuned for further information on this via the Align project page and the January Align Newsletter.

The Align Governance Model (AGM) kicked off in September with the first meeting of the Align User Group (AUG). The group also met on November 3 to discuss the backlog list of requested functionality. The purpose of the AGM is to recognize the impact of the Align and ERO SEL tools on the entirety of the CMEP program. The model will do this by fostering collaboration across the ERO Enterprise about Align tool functionality, expenditures, and business value and providing close integration with existing CMEP committees. The model will be the mechanism to determine Align tool functionality once operational. The model also addresses interaction and input with registered entities. More details about the Align Governance Model and its participants can be found on the Align project page.

The NERC Align Project Team is working with those Regional Entities that support Canadian regulators (i.e., MRO, NPCC, and WECC) to create project plans and activities in support of using Align. These activities include determining high-level requirements by province, importing provincial standards data into Align, and defining the appropriate user roles. Currently, Ontario is live with Align as of Release 1 in May 2021. The implementation plan for Canadian provinces is below, but is subject to change as requirements and data elements are finalized:

- Manitoba and Saskatchewan (MRO) – Q2 2022
- Alberta and British Columbia (WECC) – Q2 2022
- Nova Scotia (NPCC) – Q4 2022

All registered entity staff seeking to access Align must register for an ERO Portal account. Each registered entity's Primary Compliance Contact (PCC) is responsible for approving access requests for their respective entity via the ERO Portal. All users who have been previously been granted access, as well as those granted access in the future, to the Align Submitter Role will have access to the ERO SEL. If you have questions or problems concerning your ERO Portal account, please submit a support ticket here.

If you experience any technical issues, please submit a NERC help desk ticket at the above link.

- Desirée Sawyer and Marissa Falco, MRO Align Change Agents

Reliability Standard CIP-013-1

Use of contracts as a procurement control

MRO staff has observed during the course of oversight work that some Registered Entity programs may construe a contract as a procurement or the identifying factor for CIP-013 applicability. However, the purpose of CIP-013-1 Cyber Security – Supply Chain Risk Management is to *"… mitigate cyber security risks to the reliable operation of the Bulk Electric System (BES)…"* and the applicability statement in R1 is *"…security risk management plans(s) for high and medium impact BES Cyber System (BCS)..."* These statements speak to the target of the standard (the applicable systems), which are the Cyber Assets (CAs) and associated products/services that materially affect the BES. MRO staff would look for data that corroborates that an R1.1 cyber security risk assessment and the R1.2 sub-requirements were performed for high and medium impact BCS and related products/services. As such, *a contract itself is not the procurement; it is a control over the procurement*. This is evidenced by supply chain risk management (SCRM) programs that could rely solely on a product-based implementation, rather than a vendor-based implementation (i.e., the methods used for emergency procurements from a big-box store versus those that occur under a master service agreement).

Another reinforcing point that the contract is not a procurement is that the BES risk is non-transferrable and ultimately the Registered Entity is still responsible for compliance, and thus MRO staff evaluates compliance on a product/service basis (i.e., patching, antivirus, open source software, etc.).

For illustration purposes, a *contract as a control over a procurement* might look like the following examples:

- **Obligation to notify the entity of the following changes that may trigger a risk assessment:**
  - Details on what changes in products and/or services rise to a significant enough level to be reported to the entity;
  - Mergers or acquisitions;
  - Contract term changes; or
  - Renewals.
- **Obligation to notify the entity of the following changes that trigger some security-related actions:**
  - Termination dates;
  - Definitions of what rises to the level of a reportable incident, and thus reporting that incident to the entity;
  - Definitions of what is considered a vulnerability of high enough severity in a subcomponent that it requires reporting to the entity; or
  - New patching subscription software or antivirus subscription software releases.

MRO recommends Registered Entities have a SCRM approach that defines procurements of BCS and its associated products/services with prerequisites and triggers that require new R1.1 risk assessments or other R1.2 security-related actions using the *contract as one of the controls* that attempts to guarantee performance of the standard requirement. Your process could include a flowchart diagram of potential procurement scenarios, decision trees, and results.

An entity could take a *product or service is the procurement* a step further than the applicable systems in CIP-013 and consider CIP-adjacent procurements that can materially affect the BES (e.g., IT/OT boundaries, peripherals that attach to BCS) or apply more rigor to BCS associated with CIP low impact assets. Looking at the CAs and services that materially affect the BES not only ensures compliance, but also provides for good security practices, ensuring that applicable items will not slip through your SCRM security net.

- Lee Felter, Principal Risk Assessment and Mitigation Engineer CIP and Holly Haynes, Sr. CIP Compliance Auditor

REGISTRATION AND CERTIFICATION

ERO Enterprise Registration Guidance

Becoming registered on the NERC Compliance Registry can lead to many questions. With the recent addition of the Centralized Organization Registration ERO System (CORES), NERC and the Regional Entities (collectively the ERO Enterprise) determined that clarification on the registration process was needed. The ERO Enterprise collaborated on and recently completed updated registration documents to assist entities with the registration process. The ERO Enterprise Informational Package assists in the determination of candidacy for registration with NERC, gives specifics on the registration process itself, and details necessary items to complete after the entity is registered.

The ERO Enterprise Registration Procedure document will assist new entities by providing a comprehensive overview of the registration process and will aid in determining the entities' responsibilities, those of NERC, and those of the respective Regional Entity. This documentation also provides current registered entities with information on other registration processes that pertain to their status as a registered entity.

Both of these documents can be found on the NERC website at the links below. If you have any questions on registration please send a message to registration@mro.net.

- ERO Enterprise Informational Package.
- ERO Enterprise Registration Procedure.

- Dana Klem, Reliability Analysis Administrator

The most recent NERC Standards, Compliance and Enforcement Bulletin can be found here.

EXTERNAL AND REGULATORY AFFAIRS

State Regulatory Outreach Initiative

The interconnectedness of the North American bulk power system, coupled with shared challenges that impact the reliable and secure delivery of power to consumers, provides many opportunities for information sharing and coordination across government and industry partners.

As this State Regulatory Outreach Initiative matures, MRO continues to reach out to state commission staff within its regional footprint to provide information on MRO and the ERO Enterprise. On October 28, 2021, Sara Patrick, President and CEO, attended the Organization of MISO States (OMS) Annual Meeting held in Minneapolis, MN. Looking ahead, on December 16, 2021, John Seidel, Principal Technical Advisor, along with representatives from Reliability First and SERC Reliability Corporation, will jointly present the final report of the 2021 Cold Weather Event at the OMS Board meeting. Staff from NERC and the Federal Energy Regulatory Commission (FERC) will also attend. In the coming months, MRO will send communications about MRO and ERO reports related to the 2021 cold weather event, winter reliability assessments, ERO Enterprise Long Term Reliability Assessment, and outreach opportunities to state commissioners and commission staff.

MRO will continue to coordinate with Reliability First, SERC Reliability Corporation, and the Western Electric Coordinating Council, on outreach opportunities in states within multiple regional footprints.

Federal Regulatory Update

On December 3, 2021, Willie L. Phillips was sworn in as a Commissioner of the Federal Energy Regulatory Commission (FERC). Commissioner Phillips is serving a five-year term that ends on June 30, 2026. He most recently served as Chairman of the Public Service Commission of the District of Columbia (DCPSC) and, prior to his DCPSC service, served as Assistant General Counsel for NERC. Before joining NERC, he worked for two law firms where he advised clients on energy regulatory compliance and policy matters. Per the FERC Press release issued on December 3rd, “Commissioner Phillips has served on the boards of several organizations, including the board of directors for the National Association of Regulatory Utility Commissioners (NARUC) and the Organization of PJM States (OPSI).

Commissioner Phillips has also served as president of the Mid-Atlantic Conference of Regulatory Utility Commissioners (MACRUC), and has held leadership roles on several advisory councils, including the Electric Power Research Institute (EPRI) Advisory Council.”

He holds a Juris Doctor from Howard University School of Law, and a Bachelor of Science from the University of Montevallo.

Wishing everyone a happy and healthy holiday season. If you have any questions, do not hesitate to reach out to me at tasha.ward@mro.net.

- Tasha Ward, Director of Enforcement and External Affairs

HOLIDAY MESSAGE FROM MRO

BULK POWER SYSTEM RELIABILITY

Managing Periods of Bulk Power System Instability

How manual load shedding is executed

This is the second article in a three-part series on manual load shedding and its criticality to the preservation of reliability for the North American bulk power system during times of duress. The first article was published in August and the final article will be published in a subsequent issue of Midwest Reliability Matters.

In the first Midwest Reliability Matters article of this series published in August, we described why manual load shedding is sometimes necessary to maintain grid reliability under a variety of conditions. In this article, we will provide how the determination is made to manually shed load and how regional transmission operators and member organization system operators execute the process quickly and efficiently. There are various reasons why manual load shed may be necessary. Balancing supply and demand should be spread across an entire Balancing Authority (BA) area and typically would involve many entities and have a rotational aspect to the manual load shed process. Local transmission emergencies that involve component overloads would typically involve fewer individual companies and be localized to the affected area. No matter the reason, timely execution of the process is important

to preserve the reliability of the overall system and avert instability and cascading outages on the bulk power system.

The manual load shedding process would typically be initiated by the Reliability Coordinator (RC) or BA, but individual member organization system operators always have this tool available to them for local emergencies. The RC or BA determines the amount of load shedding that is required in megawatts (MW) through detailed real-time modeling considerations over the affected area and uses pre-determined percentages to calculate the individual member MW amounts. These amounts are communicated as an Operating Instruction through electronic communication systems with alerting capabilities and include a confirmation response to the Operating Instruction to meet the three-way communication requirements set by NERC Reliability Standards.

Individual member Transmission Operators handle these Operating Instructions in various ways based on their operational capabilities and business models. Many need to shed load at the transmission or sub-transmission system level, while some can shed load at a distribution system level. In all cases, the individual plans must account for critical load considerations, coordination with automatic load shedding plans, and be reviewed periodically to account for system configuration changes. In addition, manual load shedding must be done in a time sensitive manner as quickly as possible upon receipt of the RC or BA request, and in an amount as close to the need as possible. Many member organizations have Energy Management System (EMS) applications to execute the request and include real-time information on circuit status, MW amounts on each circuit within the plan, control actions with confirmation steps, and the ability to rotate the various circuits contained in the plan at a prescribed duration. The execution of manual load shedding plans is practiced regularly through periodic drills and internally through system operator training material and system operator training simulators. The goal is to ingrain the execution of the procedure and corresponding application to ensure fast response to a request for manual load shed. Upon execution of the load shed Operating Instruction, the member organization is required to report the actual amount of load shed so that the RC or BA can calculate and confirm the requested amount in aggregate.

The benefits of the frequent drills and periodic training of system operations staff at both the RC and member organizations were evident with the entities that performed manual load shed during the February 2021 cold weather event. The load shed amount and duration were determined quickly, communicated per established protocols, and executed by member organizations to maintain system reliability. This event had considerable forewarning that increased execution efficacy; however, it is expected that these benefits would also be realized during events that develop quickly with very little notice.

Again, it must be emphasized that load shedding is not an action that any organization or system operator takes lightly. It is a last resort and only used to protect the overall bulk power system by maintaining stability and preventing a large scale, cascading outage.

MRO's Reliability Advisory Council (RAC) is responsible for increasing outreach and awareness on important reliability topics, such as this one. This is the second in a three-part series published by the RAC on manual load shedding because of how critical it is to the preservation of reliability for the North American bulk power system during times of duress. The final article of the series will be published in subsequent editions of Midwest Reliability Matters.

- Reliability Advisory Council Members Dick Pursley, Great River Energy, CJ Brown, Southwest Power Pool, and John Stephens, City Utilities of Springfield

About the Authors:

Dick Pursley is the Director, Operations and Transmission Services, at Great River Energy, a position he has held since 2019. In this position he has oversight of control center operations and support, along with substation and transmission line construction and maintenance activities. He has worked in the electric utility business for 31 years, the last 21 of which have been with Great River Energy in the utility operations area. He was a member of the MRO Operating Committee and is the current chair of the MRO Reliability Advisory Council. He was the MRO representative on the NERC Operating Committee prior to this committee reorganizing and becoming part of the NERC Reliability and Security Technical Committee (RSTC) in 2020, and has been an active participant and a member of the NERC Event Analysis Subcommittee since 2015.

Pursley has extensive knowledge in a variety of operational areas, including cyber and physical security, real-time operations, operational planning analysis, system protection, and resource adequacy. He has a BS in electrical engineering and a MS in agricultural engineering from the University of Minnesota.

C.J. Brown received his bachelor of science in applied mathematics/economics from the University of Central Arkansas in 2000 and was certified as a NERC Reliability Coordinator in 2007. He has been with Southwest Power Pool (SPP) since 2006 and is currently the director of system operations at SPP. His responsibilities include oversight of the SPP real-time operations for tariff administration, markets, balancing authority and reliability coordination functions in the Eastern and Western interconnections.

Brown has over 20 years of experience in the electric utility industry with roles in generation, power marketing, market monitoring and system operations.

John Stephens has been the Director—Power System Control at City Utilities of Springfield for 24 years. He is responsible for real-time Transmission Operations and has experience in wholesale power market transactions, open access transmission policy, and NERC compliance. He has been an active participant in SPP throughout his career serving on many groups within SPP, and also serves on NERC and MRO working groups and committees, including the NERC Reliability Issues Steering Committee, NERC Reliability and Security Technical Committee, and MRO Reliability Advisory Council.

Stephens is a registered Professional Engineer in the state of Missouri and holds a BSEE from Rose-Hulman Institute of Technology, and an MSEE from Clemson University.

ERAG Holds 2021 Workshop Virtually

The Eastern Interconnection Reliability Assessment Group (ERAG) held its 2021 workshop virtually on October 26, 2021. The theme of the workshop, which attracted more than 150 participants, centered on risks associated with the increasing penetration of Distributed Energy Resources (DER) across the Eastern Interconnection and the challenges for bulk power system (BPS) planning and operations. ERAG is made up of the following four Regional Entities within the Eastern Interconnection: ReliabilityFirst (RF), Midwest Reliability Organization (MRO), Northeast Power Coordinating Council (NPCC), and SERC Reliability Corporation (SERC). ERAG Chairman Neeraj Lal (NPCC) opened the workshop with a welcome and overview of ERAG's responsibilities to preserve and enhance bulk power system reliability in the Eastern Interconnection.

ERAG vice-chair Bryan Clark (MRO) served as the conference emcee and introduced the first speaker, John Paul "JP" Skeath (Engineer II, Advanced System Analytics and Modeling) with NERC. Skeath's presentation began by referencing DER efforts by the NERC System Planning Impacts from Distributed Energy Resources Working Group (SPIDERWG) whitepapers, reliability guidelines, and recommendations to improve modeling of inverter-based resources. Nearly half of all existing DERs in North America are not modeled in power system steady-state analyses and about 75 percent of DERs are not modeled in dynamics simulations, the main reasons being the lack of DER information to populate the transmission planning study cases and the unavailability of DER models or tools. His presentation was followed by an introduction of Shayan Rizvi (Senior Reliability Assessment and Performance Analysis Engineer) with NPCC. Rizvi further elaborated on SPIDERWG's model verification of aggregate DER models used in planning studies and forecasting practices and the relationship to DER modeling for BPS planning studies.

PJM Interconnection panelist speakers Julia Spatafore (Transmission Planning), John Reynolds (Resource Adequacy Planning), and Joseph Mulhern (Generation) presented the challenges in collecting DER data and its application in load forecasting, as well as the methodologies used for estimating DER. The current practice for modeling DER includes implicitly modeling as net load, which may lead to inaccurate study results. Moreover, distribution companies that fall below the 75 MW threshold, and are thus not required to provide data under NERC jurisdiction, create additional challenges for planning coordinators and transmission owners to obtain DER information.

Amanda Schiro (Senior Manager, Model Engineering) with MISO, presented the progress and challenges associated with MISO's DER program, compliance with FERC Order 2222, and representation in MISO Operation and Market structures. The continued increase in total DER representation in MISO's footprint has resulted in several key decisions on how DER will be integrated into MISO systems and services. DER coordination with states, FERC, and vertically-integrated versus customer choice, gathering of DER information, and visibility continue to present challenges during the compliance framework process.

Brad Marszalkowski (Senior Engineer, Transmission Service Studies) and Meenakshi Saravanan (Senior Engineer, Transmission Planning) with ISO New England, gave an overview of ISO New England's DER data collection and transmission planning challenges. They further highlighted the importance of accurate DER models in transmission planning studies and the process for collecting DER data; and also shared some lessons learned.

The conference received extremely high reviews from those who attended. For more information or suggestions on future ERAG workshop topics, please contact Salva Andiappan, Principal Reliability Assessment Engineer.

- Salva Andiappan, Principal Reliability Assessment Engineer

Reliability Advisory Council Helps Prepare Entities for Winter Weather

On October 21, 2021, 331 individuals participated in MRO's Reliability Advisory Council (RAC) Cold Weather Preparedness Workshop. Speakers presented on both past experiences managing extreme cold weather and on best practices and preparations necessary to minimize the impacts of such events in the future.

CJ Brown, Director of System Operations with Southwest Power Pool (SPP) served as the workshop emcee and provided valuable insight during Q&A portions of the workshop.

The workshop began with Dallas Rowley, Director System Operations with Oklahoma Gas and Electric (OGE), sharing OGE's experience during the 2020 October Ice Storm that was unseasonably early. Because leaves were still on the trees during this ice storm, a situation was created where a larger surface area for ice build-up added more stress and weight on trees and limbs, causing them to fall. On October 27 and 28, 2020, OGE experienced the accumulation of up to one inch of ice on vegetation and equipment along with high gusts of wind, causing damage to its distribution and transmission systems. On October 29 the winds increased, causing additional damage. Some portions of the OGE system were out of service for 16 days.

Tony Rowan, MISO's Senior Manager Senior Manager Seasonal and Generator Deliverability, discussed MISO's preparations for cold weather operations. MISO performs training year-round for MISO System Operators. Training

includes both normal and abnormal operating conditions, drills on emergency procedures with peers at member companies, and both winter and summer readiness. MISO performs coordinated seasonal studies to evaluate known areas of concern, as well as identify any possible new issues for both summer and winter operations. MISO projects adequate reserves to meet winter peak demand for the 2021-22 winter season. In addition, MISO works closely with its members to identify any risks or issues related to natural gas pipelines.

Southwest Power Pool's (SPP) Yasser Bahbaz presented SPP's preparations for cold weather operations. Just as with MISO System Operators, SPP System Operators receive year-round emergency training. Balancing Authority (BA) operating levels, as defined by SPP, were compared to the operating levels identified in NERC Reliability Standard EOP-011-1. SPP has integrated uncertainties into its seven day forecasting, which includes weather, load, wind, and resource availability. In an effort to meet the higher demands in February, SPP reduced the amount of capacity allowed off-line for scheduled outages. As a result of the February 2021 severe weather event, the SPP Board of Directors approved recommendations to SPP's winter assessment process and these recommendations have been prioritized into one of three tiers based upon severity.

John Seidel, Principal Technical Advisor for MRO, provided an overview of the severe winter weather events that took place during the week of February 14, 2021 that led to a joint FERC/ERO Enterprise inquiry. During this time, BAs in ERCOT, SPP and MISO ordered members to shed firm load of 20,000 MW, 2,700 MW and 700 MW, respectively. The largest impact of this event was experienced in the ERCOT region, where 1,045 generators experienced 4,124 outages, derates, or failures to start for over two consecutive days. ERCOT averaged 34,000 MW of generation outages, which is 49 percent or nearly half of ERCOT's 2021 actual all-time winter peak load of 69,871 MW. The recommendations from the joint inquiry of the February 2021 event were presented by David Huff, FERC Division of Operations and Planning Standards. The Inquiry team made 28 recommendations, 9 of which included changes to NERC Reliability Standards.

Russ Mountjoy, Principal Reliability Specialist for MRO, provided an update on MRO's Generator Winterization Program. MRO received responses from 10 generating facilities that were surveyed regarding winterization activities and MRO has completed 4 generator site visits in the local area. MRO is working with these entities on efforts related to winterization, and once enough information has been gathered, MRO will share the results anonymously with entities across the region.

North Dakota Public Service Commissioner, Julie Fedorchak, provided insight as a Commissioner as well as a consumer. She noted that states must ensure sufficient generation resources are available to meet consumer demands, to maintain a reliable power grid, and to meet the demands of the changing resource mix.

Preston Walsh and Mike Herman, leaders of the south and north Combustion Turbine Divisions for Great River Energy (GRE), wrapped up the workshop with a presentation on GRE's experience with extreme weather operations. GRE places great emphasis on resiliency when it comes to cold weather preparedness and operations. Leading up to an extreme weather event, these GRE facilities are procuring fuel resources in order to support design parameters that allow the facilities to run during cold weather events. GRE's Resiliency Team ensures: i) proper staffing levels during events; ii) policies and procedures are up to date and are consistent across the fleet; iii) staff is properly trained in safety, operations, and maintenance; iv) staff has sufficient safety supplies; and v) system improvements are tracked and approved.

The recording of the webinar and presentation slides can be found on the MRO website.

- Russ Mountjoy, Principal Reliability Specialist

SECURITY CORNER

MRO Hosts Annual Security Training and Conference

The MRO Security Advisory Council (SAC) hosted virtual security training and conference events on October 4-6, 2021. The events were designed to expand security awareness and strengthen cyber and physical security through information shared by experts within the security industry, as well as provide clarity on real world security lessons learned and best practices. More than 500 individuals attended the training sessions on October 4-5, while the conference on October 6 saw almost 400 attendees.

There were thirty-two speakers among the three events, all of whom provided attendees with information on topics that enable organizations to build and enhance effective security programs. There were three SAC 'Ask Me Anything' sessions that were well received on the day of the conference. These Ask Me Anything sessions allowed more in-depth engagement between speakers and conference attendees, and provided an additional forum for asking questions and having discussions that might not have been possible otherwise.

The speakers for each event are highlighted below, along with the links to the presentations and recordings:

Security Training held on Monday, October 4, 2021 (Presentations and Recording):

- Jason Nations, Oklahoma Gas & Electric Corporation
- Jack Paul, Tennessee Valley Authority
- John Breckenridge, Evergy
- Steen Fjalstad, MRO
- Warren LaPlante, Allete (MN Power)
- Jodi Jensen, Western Area Power Administration
- Scott Coleman, OWL Cyber Defense
- Brian Romansky, OWL Cyber Defense
- Tony Eddleman, Nebraska Public Power District

Security Training held on Tuesday, October 5, 2021 (Presentations and Recordings):

- Warren LaPlante, Allete (MN Power)
- Rick Goins, Department of Homeland Security, Cybersecurity and Infrastructure Security Agency
- Dave Olmstead, Minnesota Department of Public Safety
- Jorge R. Diaz, Microsoft Federal Security Team
- Ian Anderson, OG&E Energy Corp.
- Chad Wasinger, Sunflower Electric Power Corporation
- Tim Anderson, Dairyland Power Cooperative

Security Conference held on Wednesday, October 6, 2021 (Presentations and Recordings):

- Steen Fjalstad, MRO
- Justin Haar, Minnkota Power Cooperative
- Sara Patrick, MRO
- Barbara Sugg, Southwest Power Pool, Inc.
- Brett Lawler, Xcel Energy
- Michael Meason, Western Farmers Electric Cooperative
- Chris Sistrunk, Mandiant
- Daniel Kapellman, Mandiant
- Bob Kolasky, National Risk Management Center
- Jeanne Tisinger, MRO Board Member
- Jason Nations, Oklahoma Gas & Electric Corporation
- John Breckenridge, Evergy
- Matt Polak, Picnic Corporation
- Chad Wasinger, Sunflower Electric Power Corporation

The training and conference received very positive feedback from attendees and speakers.

We hope to provide another successful security conference and training in 2022 - currently planned for October 4-6, 2022.

- Estee Nauer, Security Administrator, MRO

2021 MRO Regional Security Risk Assessment

MRO's 2021 Security Conference was followed by the Regional Security Risk Assessment, which was held virtually for the second time. Members of MRO's Security Advisory Council (SAC) and regional security experts participated in discussions on most relevant security risks within the region. This year's assessment incorporated a series of pre-assessment surveys that were completed by operational, physical, and cyber security subject matter experts from across the region.

The meeting began with an update from the E-ISAC on North American-wide security risks to registered entities. Meeting participants then broke out into small group sessions based on the individual's security expertise to discuss cyber security, physical security, and operational security risks identified through the pre-assessment surveys as the most prominent risks within the MRO footprint.

The risk findings from this meeting will be used as input to MRO's Regional Risk Assessment that will be published later this year, and by the MRO SAC to help identify topics for future outreach and training deliverables.

To participate in next year's assessment, please reach out to MRO Director of Security Steen Fjalstad, at steen.fjalstad@mro.net.

- Estee Nauer, Security Administrator, MRO

NERC's Two-Day Grid Security Exercise Allows Industry to Test Response Capabilities

NERC's grid security exercise, GridEx VI, concluded the distributed play portion of its exercise yesterday. Over the past two days, more than 700 planners led their organizations' efforts to exercise their response and recovery plans in the face of simulated, coordinated cyber and physical attacks on the North American bulk power system and other critical infrastructure. Hosted every two years by NERC's Electric Information Sharing and Analysis Center (E-ISAC), GridEx is the largest grid security exercise in North America.

Exercises like GridEx are an important aspect of NERC's mission to assure the reliability and resilience of the bulk power system, which is inextricably tied to grid security. Since the last GridEx in 2019, the cyber security landscape has continued to evolve, guided by geopolitical events, new vulnerabilities, changes in technologies, and increasingly bold cyber criminals and hackers.

Read the full announcement.

VOLUNTEER RECOGNITION PROGRAM

MRO Presents 2021 HERO Award to Two Deserving Recipients

MRO has a long history of relying on the expertise and dedication of the many members and stakeholder volunteers that support MRO's mission "to identify, prioritize and assure effective and efficient mitigation of risks to the reliability and security of the North American bulk power system by promoting **H**ighly **E**ffective **R**eliability **O**rganizations® (HEROs)." In 2020, MRO implemented a Volunteer Recognition Program to acknowledge these volunteers for their hard work and contributions to the success of MRO. Part of the Volunteer Recognition Program includes an annual HERO Award. This prestigious award provides MRO the opportunity to recognize individuals annually for their exemplary initiative and commitment to advancing the concept and principles of HEROs throughout the MRO region and in support of MROs vision and mission. The qualifications for HERO Award nominees follow the principles of high reliability organizations.

In August 2021, MRO solicited nominations from industry for this HERO Award and several candidates were submitted. The board's Organizational Group Oversight Committee (OGOC) reviewed the nominees and their qualifications and after much discussion, selected two individuals to receive the 2021 award.

Mark Buchholz
Compliance Manager,
Western Area Power Administration

Sharon Koller
Reliability Standards Compliance
Strategist and Assurance Manager,
American Transmission Company

Mark Buchholz from Western Area Power Administration is a very active member of MRO's CMEP Advisory Council, and due to his dedicated involvement across the ERO Enterprise, Mark has become a conduit between MRO and multiple SPP, NERC, and other industry groups. His unique perspective helped avoid duplication of efforts during the development of various MRO initiatives. Buchholz was also essential in spearheading the coordination of multiple registered entities' event analysis programs, resulting in a more effective and efficient means of understanding power system events in a portion of MRO's footprint that has multiple owners and operators.

Sharon Koller from American Transmission Company is also an active member of MRO's CMEP Advisory Council and has been an invaluable contributor to MRO and the ERO Enterprise for many years. She was instrumental in providing clarity on the Critical Infrastructure Protection standards through her participation on several MRO Subject Matter Expert Teams that produced continent-wide recognized standard application guides for industry's implementation of security requirements. She also shares her expertise with, and participates on, NERC Standards Drafting Teams that develop and modify the CIP standards.

Buchholz and Koller were recognized with a board resolution at MRO's Annual Member and Board Meeting on December 2, 2021, and will receive a framed certificate and an award. OGOC Chair Keri Glitch from MISO said, "Both Mark and Sharon exemplify the qualifications of the HERO Award and have made significant contributions to assuring a highly reliable and secure North American bulk power system." Glitch also noted that the OGOC struggled again this year to select a single finalist, as both Buchholz and Koller demonstrated extraordiary commitment to MRO's vision of a highly reliable and secure North American bulk power system. The committee ultimately determined that the contributions of both individuals merit receipt of this important award.

HERO Award recipients will be highlighted on the HERO page of MRO's website.

MRO Board Recognizes Retiring Organizational Group Members

At MRO's Annual Member and Board Meeting on December 2, 2021, the board recognized several long-standing members of MRO's organizational groups that are retiring from committee service at the end of this year. Pursuant to MRO's Volunteer Recognition Program, organizational group members that retire from service from an MRO organizational group or as a MRO representative on a NERC organizational group that have served 12 or more years, recieve a framed certificate of outstanding service, a board resolution of recognition, and an award. (The length of service includes volunteer work on certain SPP committees that are outlined in the Volunteer Recognition Program.)

Please join us in thanking the following individuals for their dedicated service and strong support of MRO and reliability and security of the regional bulk power system!

Dean Schiro
DER Integration Manager, Xcel Energy

Jodi Jensen
Sr. Policy and Planning Advisor, Formerly with Western Area Power Administration

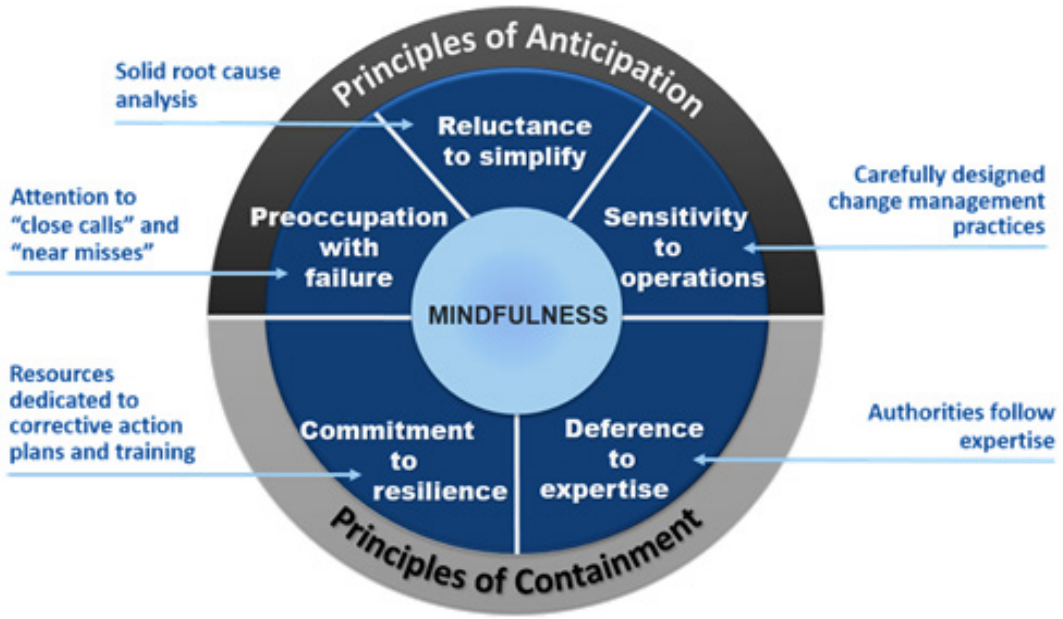
John Breckenridge
Director of Corporate Security, Evergy

Joe DePoorter
Director, NERC Compliance and Generation Operations, Madison Gas and Electric

Calling All HEROs!

MRO seeks volunteers for open organizational group positions

MRO has utilized the theory and principles of high reliability organizations (HRO) to assure a reliable and secure North American bulk power system (BPS) in MRO's region for a number of years. When applied to the power industry, these principles promote highly effective reliability organizations (HEROs) that implement high standards of operational excellence in daily work. The BPS is extremely complex, and the HRO principles of anticipation and containment support reliability and security in today's challenging and risk-adverse environment.



To find the most effective and efficient path towards a resilient future, MRO works closely and collaborates with industry experts from across the region to help ensure that dynamic system changes are planned for and addressed. This kind of collaboration is most evident in the work of MRO's organizational groups, which are designed to assess risk, develop mitigation strategies, and share information and best practices with other entities across MRO's regional footprint. To serve on an MRO organizational group, individuals must be employed by an MRO member company. MRO members also have an opportunity to participate on NERC organizational groups on MRO's behalf. Providing a conduit between MRO and NERC organizational groups increases alignment and reduces duplication of efforts.

At the helm of MRO's organizational group structure is the board's Organizational Group Oversight Committee (OGOC), comprised of industry leaders that provide strategic guidance and oversight to MRO's organizational groups. Next in line are three advisory councils comprised of subject matter experts from across MRO's regional footprint that provide advice and counsel to MRO's Board of Directors, staff, and registered entities on the topics of reliability (RAC), security (SAC), and compliance monitoring and enforcement (CMEPAC). The councils oversee several subgroups that are also comprised of subject matter experts in specific areas that are charged with assessing risk and producing guidance and outreach on specific risk topics.

Serving on an MRO organizational group provides individuals an opportunity to share knowledge and expertise, learn from other subject matter experts, and network with peers across MRO and North America. Additionally, these groups produce deliverables that benefit the entire region and positively impact the power system industry. These deliverables include guidance documents, tools to address risk, outreach in the form of webinars, workshops and conferences, and articles in MRO's bimonthly newsletter.

Opportunities exist to serve on an MRO organizational group! Below is a list of current openings:

- CMEP Advisory Council (3 seats)
- Reliability Advisory Council (2 seats)
- Protective Relay Subgroup (1 seat – Minnesota area)
- Security Advisory Council Threat Forum (1 seat)
- NERC Standards Review Forum (5 seats: Canadian, FPMA, and GPM)

The subgroups that report to the three advisory councils also do important work for MRO. For example, the Protective Relay Subgroup (PRS) analyzes system protection and control issues relevant to reliability. PRS seats are geographically based with one open seat for a utility that has operations in the state of Minnesota. The SAC Threat Forum (SACTF) facilitates sharing of threat information throughout the region and has one open seat. One of the primary means the SACTF shares this information is through a closed weekly call that includes staff from the NERC Electricity Sharing and Analysis Center (E-ISAC). The NERC Standards Review Forum (NSRF) meets weekly to provide an efficient process for reviewing and providing jointly agreed upon comments to NERC Standards Drafting Teams, and for other draft policies or procedures that are out for comment. The NSRF is the only MRO organizational group that is sector balanced and has 3 open Canadian Utility seats, one open seat for a Federal Power Marketing Agency, and one open seat for a Generator Power Marketer.

In addition to serving on an MRO organizational group, there are opportunities to serve as MRO-sponsored NERC representatives who act as liaisons between NERC and MRO organizational groups. These individuals interface with MRO through an assigned staff liaison and provide written reports summarizing NERC activities to the applicable MRO advisory council. The OGOC determines which NERC organizational groups MRO should follow with a sponsored representative based upon risk and the value that an industry representative can provide to MRO. In conjunction with a recent NERC initiative to redesign its committee structure, the OGOC evaluated all of NERC's organizational groups in 2021 and made the decision to expand the number of NERC organizational group representatives for MRO. You can read more about this effort in the August issue of this newsletter.

MRO has openings on the following NERC organizational groups:

The Energy Reliability Assessment Task Force (ERATF) was recently formed to address the challenge of ensuring energy adequacy with energy-constrained resource. The ERATF analyzes and provides recommendations to mitigate risks associated with fuel location, volatility in load forecasts, and other issues related to energy assurance.

The Security Integration and Technology Enablement Subcommittee (SITES) is a newly-formed subcommittee that exists to identify, assess, recommend, and support integration of technologies on the BPS in a secure, reliable and effective manner, recognizing the convergence of operational and information technology.

The Security Working Group (SWG) supports industry efforts to mitigate emerging security risks by providing technical expertise and feedback into compliance processes to enhance compliance-related products, guidelines, best practices, and lessons learned.

The NERC Project Management and Oversight Subcommittee (PMOS). The PMOS is a subcommittee of the Standards Committee and assigns each of its members to Reliability Standards projects to assist in the process of developing new or modified Standards.

To apply for any of these open positions, please contact Lisa Stellmaker, Executive Administrator and Office Manager.

- Richard Burt, Senior Vice President and Chief Operating Officer

DIVERSITY, EQUITY AND INCLUSION AT MRO

DEI Survey Conducted of Staff

"Diversity is being invited to the party. Inclusion is being asked to dance." – Vernā Myers.

In June and July of this year, the Diversity, Equity, and Inclusion (DEI) Committee spent time developing a survey focused on seeking information about the MRO employee population in an effort to explore and understand who our employees are as individuals. The data received will help guide the DEI committee's future initiatives to provide education, awareness, and opportunities to celebrate MRO's differences. The committee engaged Mikella Schiller, Senior Psychology student, and Dr. Joel Frederickson of Bethel University to help facilitate this survey and ensure confidentiality for participants.

The survey compiled approximately sixteen (16) scaled questions, multiple-choice questions, and a couple of fill-in-the-blank questions broken down into three specific categories of awareness, empowerment, and respect and equity. The survey was then disseminated to MRO staff during a two-week period from August 2 through August 13. Approximately 69 percent of employees participated in the first diversity, equity, and inclusion survey disseminated at MRO.

The results yielded several positive themes. For example, the development of the DEI Committee and the Growing to CARE book club at MRO has been useful and positive by encouraging tough conversations even if it might be difficult, bringing awareness to potentially diverse and inclusive ideas and issues, and offering the opportunity to learn more about each other's background and experiences. It is also clear that most employees at MRO appreciate and support management's approach to addressing issues in our society and MRO's proactive stance on taking action when it has been needed.

The DEI Committee has learned that there is room for growth and there is no time like the present. The committee took a hard look at the data from the survey and the biggest themes extracted include offering opportunities that are more educational to help foster an atmosphere of acceptance and understanding. In order to build upon that theme, the DEI Committee must work to provide accurate information on societal events while offering employees the opportunity to share differing views, opinions, and feedback in a comfortable, safe space without bias or prejudice.

In summary, the DEI Committee is focused on a number of target improvements for 2022 based on the data received through the survey and the before-mentioned themes. Action plans will be created to encourage freedom of expression in a space where contrary opinions can be heard and are appreciated, fostering an environment that is inclusive to all races, ethnicities, genders, ages, religions, disabilities, and sexual orientations. This diversity extends to education and experiences, personalities, skill sets, and political affiliations.

In the spirit of diversity, the DEI Committee is also committed to acknowledging multiple religions cultural practices and related holidays. As such, we will continue to seek to opportunities to share and celebrate individual cultural experiences.

However it is that you celebrate the upcoming holiday season, we wish you good health, happiness, joy and peace.

- Holly Haynes, Sr. CIP Compliance Auditor, on behalf of MRO's Diversity, Equity and Inclusion Committee

INDUSTRY NEWS AND EVENTS

LATEST NEWS:

NERC Releases Third Episode of Compliance Podcast

On December 8, 2021, NERC announced the release of the third installment of its compliance podcast, "Currently Compliant." Hosted by ERO Enterprise subject matter experts (SMEs), "Currently Compliant" is intended to be a quick way to bring attention to frequently asked questions on which the SMEs have some clear insights to share. This podcast focuses on the recent release of the Cold Weather Practice Guide as well as CIP-008-6 – Cyber Security — Incident Reporting and Response Planning, which went into effect in January 2021. View the podcast here.

Willie Phillips Sworn in as FERC Commissioner

On December 3, 2021, Willie L. Phillips was sworn in as a member of the Federal Energy Regulatory Commission. Phillips is serving a five-year term that ends June 30, 2026. Read the full announcement.

FERC and NERC Staff Recognized for Work on Joint Cold Weather Inquiry Report

FERC Chairman Glick recognized the dedicated work of FERC and NERC staff on producing the joint report focused on the February 2021 cold weather event at FERC's November open meeting. The report looks at the impacts the freeze had on the Bulk Electric System in Texas and other parts of the South Central United States and provides recommendations for avoiding the situation in the future. Read the full announcement.

NERC Warns of Regional Reliability Risk this Winter; Stresses Readiness Planning

NERC's assessment for the upcoming winter finds that reliability risk is elevated in regions that are especially vulnerable to extreme weather, natural gas supply disruptions and low hydro conditions. Read the report here.

MRO Releases 2021-22 Regional Winter Assessment

MRO released its 2021 Regional Winter Assessment (2021 RWA), which is an independent assessment of the upcoming winter season to identify challenges and potential reliability risks to the reliable andsecure operations of the bulk power system within MRO's regional footprint. Read the full announcement.

INDUSTRY EVENTS:

FERC Open Commission Meeting (Virtual)

December 16, 2021 | 10 to 11 a.m. EST

This virtual open meeting will be available to view by webcast. Register here.

REGIONAL AND MRO EVENTS:

MRO CMEP Advisory Council Monthly Call

December 14, 2021 | 3 - 4 p.m. CST | Webex

The purpose of this call is to provide advice and counsel on topics such as the development, retirement, and application of NERC Reliability Standards, risk assessment, compliance monitoring, and the enforcement of applicable standards. Register here.

MRO Regional Winter Assessment Webinar

January 26, 2022 | 10 to 11 a.m CST | Webex

The purpose of this webinar is to provide information to registered entities and stakeholders that are involved in resource and transmission planning and operation of the bulk power system in MRO's region. Register here.

In addition to the above events, MRO's NERC Standards Review Forum and Security Advisory Council Threat Forum continue to meet weekly.To see more MRO meetings and events, visit our website calendar.

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