

**NERC**

NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

# Compliance Monitoring and Enforcement Program and Organization Registration and Certification Program Annual Report

February 9, 2023

RELIABILITY | RESILIENCE | SECURITY



3353 Peachtree Road NE  
Suite 600, North Tower  
Atlanta, GA 30326  
404-446-2560 | [www.nerc.com](http://www.nerc.com)



# Table of Contents

---

Preface .....	i
Executive Summary .....	2
Chapter 1 : CMEP and ORCP Program Development and Continuous Improvement .....	3
CMEP Implementation Plan .....	3
Risk Element Changes from 2022 CMEP IP .....	4
Rules of Procedure Revisions .....	4
Appendix 4A Audits and Management Action Plans.....	5
Compliance Oversight Plans .....	5
Inherent Risk Assessment .....	5
Self-Logging.....	6
ERO Enterprise CMEP and ORCP Staff Training.....	6
Chapter 2 : Oversight Activities.....	8
Overview .....	8
NERC Oversight Priorities .....	9
Align and Secure Evidence Locker Oversight.....	9
Annual Find, Fix Track, and Report and Compliance Exception Programs Review .....	9
2022 Audit Observations .....	10
Post-Audit/Spot Check Feedback.....	10
Technical Feasibility Exceptions.....	10
BES Registration Exceptions.....	11
Oversight of Canadian CMEP Efforts.....	11
Chapter 3 : Stakeholder Outreach.....	12
Facility Ratings.....	12
Themes Report .....	12
Facility Ratings Call to Action Update .....	13
Incident Response .....	14
Align and Secure Evidence Locker Outreach.....	15
Presentations at the CCC Open Meetings.....	15
Compliance Guidance .....	15
Chapter 4 : Year in Review .....	16
Align and SEL .....	16
Performance Related Improvements.....	16
Release 4, 4.1, and 4.5 Deployment .....	16

Functional Enhancement Prioritization.....16

Legacy Data Migration and System Retirement.....17

Cold Weather Inquiry.....17

Noncompliance Discovery Methods .....18

    Top 10 CIP Noncompliance Reported in 2022 .....20

    Top 10 O&P Noncompliance Reported in 2022 .....21

    Top 10 Serious and Moderate Risk Noncompliance Filed in 2022.....22

Focus on Reducing Older Inventory.....23

Disposition of Noncompliance.....24

Mitigation of Noncompliance.....25

Compliance History .....26

Reliability Standard Audit Worksheets.....27

Certification Completions .....27

Functional Registration Changes by Region .....28

Functional Registration Changes by Function.....28

Registration Change Basis.....29

Program Alignment Process.....30

FERC Filings and Orders and Other Developments of Note.....30

Newly Enforceable NERC Reliability Standards in 2023.....30

Chapter 5 : CMEP and ORCP Priorities for 2023 .....32

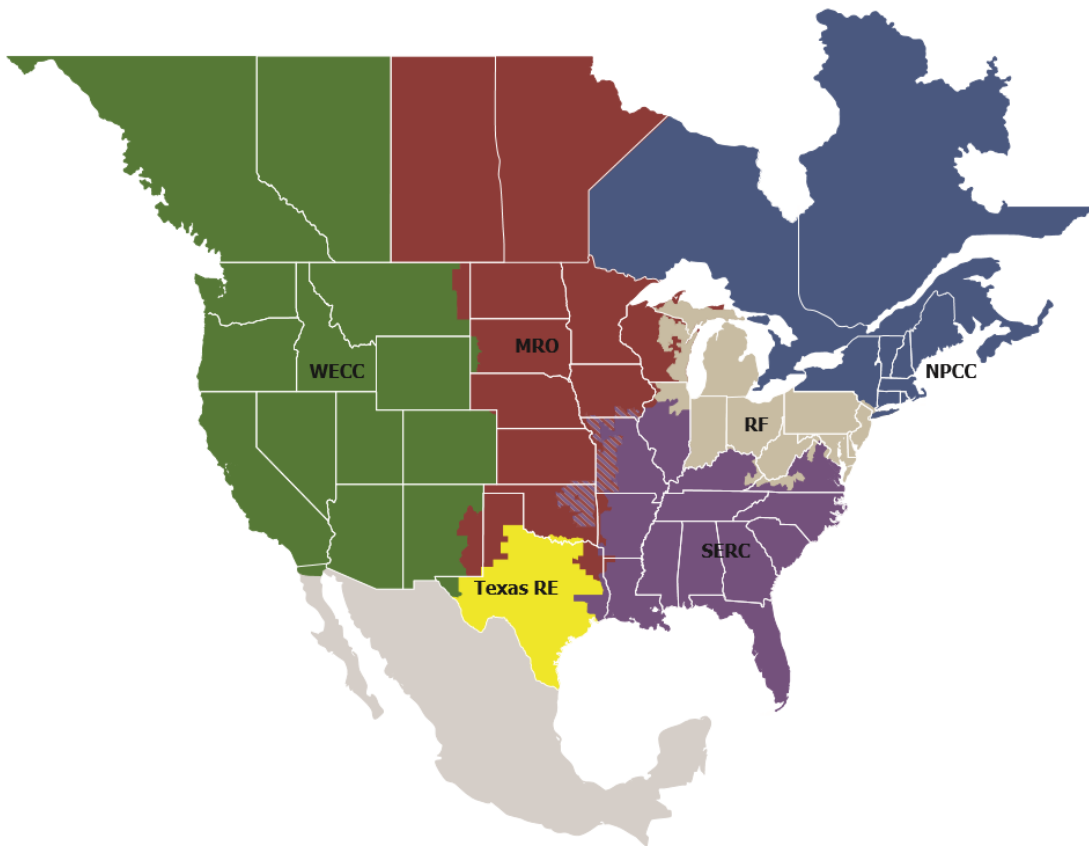
    Priorities for 2023 .....32

# Preface

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

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

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



<b>MRO</b>	Midwest Reliability Organization
<b>NPCC</b>	Northeast Power Coordinating Council
<b>RF</b>	ReliabilityFirst
<b>SERC</b>	SERC Reliability Corporation
<b>Texas RE</b>	Texas Reliability Entity
<b>WECC</b>	Western Electricity Coordinating Council

## Executive Summary

---

This report highlights key ERO Enterprise<sup>1</sup> Compliance Monitoring and Enforcement Program (CMEP) and Organization Registration and Certification Program (ORCP) activities that occurred in 2022, provides information and statistics regarding those activities, and identifies the ERO Enterprise's 2023 CMEP and ORCP priorities. Starting in 2023, NERC will issue two CMEP and ORCP Reports each year, releasing the Annual CMEP and ORCP Report in February and the Mid-Year CMEP and ORCP Report in August in order to enhance the usefulness of these reports to industry.<sup>2</sup>

In 2022, CMEP and ORCP activities throughout the ERO Enterprise reflected continuing implementation of a risk-based approach that has enabled the ERO Enterprise to focus resources on risks to the reliability of the BPS and risks specific to registered entities. In 2022, the NERC or the ERO Enterprise:

1. Strived for program development and continuous improvement in the CMEP and ORCP;
2. Conducted oversight activities of the Regional Entities;
3. Provided numerous stakeholder outreach events and content; and
4. Performed its traditional activities under the CMEP and ORCP.

Specific activities included:

- Implemented Releases 4 and 4.5 of the Align and Secure Evidence Locker (SEL) tools and initiated the Align User Group (AUG) in preparation for the transition to the Align Governance Model in 2023;
- Promoted a focus on internal controls in all CMEP activities, ranging from compliance monitoring to mitigation of noncompliance;
- Placed emphasis on industry outreach on key topics ranging from common themes seen in significant Critical Infrastructure Protection violations, new and revised Reliability Standards impacting supply chain risk management and low impact Bulk Electric System (BES) Cyber Systems, and trends and best practices seen in higher risk violations of currently enforceable Reliability Standards such as cyber and physical security and Facility Ratings;
- Endorsed Implementation Guidance addressing supply chain issues, vendor assessments, and definition of "qualified change;"
- Collaborated with the Federal Energy Regulatory Commission (FERC or Commission) on cold weather preparedness and Facility Ratings to better ensure the security of the BPS; and
- Continued to work on ERO Enterprise CMEP consistency.

ERO Enterprise priorities for 2023 include working through the Align and SEL enhancement list; continuing to embed internal control activities within the compliance monitoring program; addressing the findings from the Appendix 4A audits of the Regional Entities, working as an ERO Enterprise with stakeholder feedback to evaluate compliance monitoring and enforcement processes for efficiency; and harmonizing processes where appropriate.

---

<sup>1</sup> The "ERO Enterprise" refers to the affiliation between NERC and the six Regional Entities for the purpose of coordinating goals, objectives, metrics, methods, and practices across statutory activities. The operation of the ERO Enterprise does not conflict with obligations of each organization through statutes, regulations, and delegation agreements. The activities discussed in this report relate to compliance monitoring and enforcement performed in connection with United States registered entities. A high-level discussion of Oversight of CMEP activities in Canada is included in Chapter 2.

<sup>2</sup> NERC's prior practice has been to issue a Quarterly CMEP and ORCP Report for Q1 through Q3 and then an Annual CMEP and ORCP Report.

# Chapter 1: CMEP and ORCP Program Development and Continuous Improvement

---

The ERO Enterprise continues to work towards aligning CMEP and ORCP activities across the ERO Enterprise and identifying and addressing risks to the reliability of the BPS. Highlights from the year 2022 are discussed in more detail below.

## CMEP Implementation Plan

In 2022, NERC posted the *2023 ERO Enterprise CMEP Implementation Plan* including a focus on risk elements.<sup>3</sup> The 2023 risk elements in the CMEP Implementation Plan (CMEP IP) reflect the continued maturation of the risk-based approach to compliance monitoring. The discrete risks identified within the risk elements provide focus for measuring current state and validating registered entity progress. By tracking improvements, industry and the ERO Enterprise can justify focusing on different risks in the future. The ERO Enterprise intends that the 2023 risk elements will provide better guidance to industry and Regional Entities through its areas of focus. The updated CMEP IP also includes lists of registered functions and asset types related to the areas of focus and the description of the risk elements.

NERC identified the risk elements listed below using the risk element development process.<sup>4</sup> The development process considered data, reports, and publications that identified reliability risks that translate into priorities for compliance monitoring. Risks considered came from the Reliability Issues Steering Committee's (RISC) report,<sup>5</sup> the State of Reliability Report,<sup>6</sup> the Long-Term Reliability Assessment, other publications from the RISC, special assessments, and ERO Event Analysis insights.

The Regional Entities will evaluate the relevance of the 2023 risk elements to the registered entity's facts and circumstances as they plan CMEP activities throughout the year. For a given registered entity, requirements other than those in the CMEP IP may be more relevant to assist mitigating the risk, or the risk may not apply to the entity at all. The ERO Enterprise tailors its focus, as needed, depending on regional distinctions or registered entity differences. In its 2023 oversight activities, NERC will continue to review how Regional Entities are tailoring compliance monitoring activities based on the risk elements and Compliance Oversight Plans.

The following are the risk elements in 2023:

- Remote connectivity;
- Supply chain;
- Incident response;
- Stability studies;
- Inverter-based resources;
- Facility ratings; and
- Cold weather response.

---

<sup>3</sup> 2023 ERO Enterprise CMEP Implementation Plan, Version 1.0 (October 2022), available at <https://www.nerc.com/pa/comp/CAOneStopShop/ERO%20CMEP%20Implementation%20Plan%20v1.0%20-%202023.pdf>.

<sup>4</sup> Appendix C, ERO Enterprise Guide for Compliance Monitoring (October 2016), available at <https://www.nerc.com/pa/comp/Reliability%20Assurance%20Initiative/ERO%20Enterprise%20Guide%20for%20Compliance%20Monitoring.pdf>.

<sup>5</sup> RISC 2021 ERO Reliability Risk Priorities Report (August 2021), available at <https://www.nerc.com/comm/RISC/Documents/RISC%20ERO%20Priorities%20Report%20Final%20RISC%20Approved%20July%208%202021%20Board%20Submitted%20Copy.pdf>.

<sup>6</sup> NERC 2022 State of Reliability Report (July 2022), available at [https://www.nerc.com/pa/RAPA/PA/Performance%20Analysis%20DL/NERC\\_SOR\\_2022.pdf](https://www.nerc.com/pa/RAPA/PA/Performance%20Analysis%20DL/NERC_SOR_2022.pdf).



## Risk Element Changes from 2022 CMEP IP

The 2022 risk elements “Models Impacting Long-term and Operational Planning” and “Protection System Coordination” were refocused on specific concerns, namely into the new risk elements named “Stability Studies” and “Inverter-Based Resources”. Similarly, the 2022 risk element “Gaps in Program Execution” has been narrowed to reflect the ERO Enterprises’ efforts on Facility Ratings. Meanwhile, the 2022 risk element “Extreme Events” has been focused into “cold weather response” and “incident response”. The risk elements “remote connectivity” and “supply chain” remain largely the same as they were already focused on particular risks. While the ERO Enterprise continues to monitor for issues with program execution, sufficient assurance has been gained to allow more attention on the risk elements identified for 2023.

## Rules of Procedure Revisions

In 2021, NERC and the Regional Entities filed a series of proposals with FERC to continue streamlining CMEP activities to improve the overall effectiveness and efficiency of the ERO Enterprise CMEP. On May 19, 2022, FERC issued an order approving in part and denying in part revisions to the NERC Rules of Procedure, with the accepted changes effective the same day.<sup>7</sup> The approved revisions are summarized below. NERC will continue to perform oversight of the Regional Entities to ensure provisions that require transition (e.g., 270-day notice of upcoming scheduled Compliance Audits) are successfully completed.

### Compliance Audits

FERC approved several proposals related to Compliance Audits. The posting of an Annual Audit Plan is no longer required. Instead, Regional Entities will provide registered entities with at least 270 days’ notice of an upcoming Compliance Audit.<sup>8</sup> Additionally, Regional Entities will now have discretion whether to include an on-site component for the audits of Reliability Coordinators (RCs), Balancing Authorities (BAs), and Transmission Operators (TOPs).

### Self-Certifications and Anonymous Complaints

FERC approved the proposal eliminating the posting of a Self-Certification schedule, allowing flexibility to initiate Self-Certifications as needed based on emerging identified risks, while providing registered entities with at least 60 days’ notice. Additionally, FERC accepted revisions allowing Regional Entities to handle anonymous complaints, although the Regional Entities are still required to notify NERC of all complaints, and allowing NERC to share the identity of an anonymous complainant with Regional Entities but not other third parties.

### Mitigation Plans and Settlement Agreements

FERC accepted several proposals to simplify and streamline enforcement processes. These enhancements give NERC and the Regional Entities more time to review and approve Mitigation Plans, and registered entities will only need to report on mitigation progress when they complete a milestone instead of every quarter.<sup>9</sup> FERC accepted changes to the ROP allowing the Regional Entity to offer settlement for an Alleged Violation at any time, even if the registered entity has not requested settlement negotiations, and Regional Entities are no longer required to issue a letter with the final settlement terms, as settlement agreements and Notices of Penalty serve this purpose.

### CMEP Implementation Plan and ROP Definitions

FERC accepted the proposal to update the ROP to include a single CMEP Implementation Plan that includes ERO Enterprise-wide and Regional Entity-specific reliability risks. FERC also accepted the proposal to have one posting by November 1 instead of an initial posting on September 1 with Regional Entity Implementation Plans to follow, which

<sup>7</sup>*N. Am. Elec. Reliability Corp.*, 179 FERC ¶ 61,129 (2022) (May 19 Order or Order Approving in Part and Denying in Part Revisions to North American Electric Reliability Corporation Rules of Procedure), available at [https://elibrary.ferc.gov/eLibrary/filelist?accession\\_number=20220519-3074](https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20220519-3074).

<sup>8</sup> There is no change to the notice provided to the registered entity 90 days before the commencement of the Compliance Audit.

<sup>9</sup> There is no change to the Mitigating Activities process.

are no longer required given the move to a single CMEP Implementation Plan. FERC also approved revisions of several definitions to reflect current terminology and business practices.

## Appendix 4A Audits and Management Action Plans

As part of its duties outlined in the Rules of Procedure, NERC Internal Audit conducted audits of each of the six Regional Entities in 2022. The audits sought to assess the effectiveness of the Regional Entities' implementation of the CMEP and determine whether they meet the standards defined in Section 400 of the NERC Rules of Procedure and the corresponding annual CMEP Implementation Plan.

The audits concluded that all Regional Entities demonstrated the capability to perform CMEP administration and activities. During the course of the evaluation, NERC Internal Audit identified several best practices, such as the development and implementation of automated tools within the Regional Entities, which augment the CMEP processes across the Regional Entities. These are attributed to strong leadership and focus on optimal organizational structure, subject matter expertise, and innovation.

NERC Internal Audit also identified opportunities for improvement. In particular, NERC Internal Audit identified the need to enhance NERC oversight activities to drive greater adoption of risk-based methodologies, further harmonize processes, and more effectively use monitoring tools across the ERO Enterprise. Potential solutions for enhancement include considering a common path to leverage the full functionality of Align (the single CMEP management system) and the standardization of processes, tools, and templates to support more consistency in the implementation of the CMEP. Regional Entities developed management action plans in coordination with NERC to address any process, control and compliance observations. NERC Internal Audit identified specific improvement opportunities in the several areas, including Compliance Oversight Plans, Inherent Risk Assessments, and Self-Logging, as discussed in more detail below.<sup>10</sup>

### Compliance Oversight Plans

The ERO Enterprise uses Compliance Oversight Plans (COPs) to convey the compliance monitoring oversight strategy for each registered entity. Each entity's COP tailors compliance monitoring activities based on entity-specific performance factors such as compliance history and events, with an emphasis on understanding an entity's internal controls. The observations in this area noted:

- Development processes vary across the Regional Entities without specific guidelines for when to complete or refresh a registered entity's COP;
- Refresh frequency varied across Regional Entities; and
- Evidence of management review/approval was inconsistent.

In response, NERC Compliance Assurance committed to collaborate with Regional Entities to collect the Regional risk-based COP development and refresh processes, and as appropriate, develop a consistent approach across ERO Enterprise. Moreover, NERC Compliance Assurance will monitor COP completion and COP refresh processes to ensure they are applied in a representative manner across the Regional Entity footprint of registered entities, exemplifying a risk based approach.

### Inherent Risk Assessment

An Inherent Risk Assessment (IRA) is a review by the Compliance Enforcement Authority of potential risks posed by an individual registered entity to the reliability of the BPS. An IRA considers factors such as, but not limited to, assets, system, geography, interconnectivity, prior compliance history and factors unique to the registered entity. The results of an IRA may result in the scope of compliance monitoring for a particular registered entity to include more, fewer,

---

<sup>10</sup> Additional details, including the Consolidated Executive Summary with Management Action Plans, are available here: [https://www.nerc.com/gov/bot/ERC/Documents/CMEP%204A%20Executive%20Summary%20Consolidated\\_FINAL10132022\\_PR.pdf](https://www.nerc.com/gov/bot/ERC/Documents/CMEP%204A%20Executive%20Summary%20Consolidated_FINAL10132022_PR.pdf).



or different Reliability Standards than those contained in the annual ERO CMEP Implementation Plan. The observations regarding IRAs include:

- Risk-based approach to developing and refreshing IRAs is primarily influenced by registered function and the associated ROP requirement
- Registered entities ranked as low risk entities generally did not have an IRA developed until 2+ years after registration
- Frequency for refreshing IRAs was inconsistent across the Regional Entities; some based on annual or semi-annual risk assessments/questionnaires, changes in registration, and performance considerations from planned monitoring activity

NERC Compliance Assurance will collaborate with Regional Entities to collect the Regional risk-based IRA development and refresh processes, and as appropriate, develop a consistent approach across ERO Enterprise. Moreover, NERC Compliance Assurance will monitor IRA completion and IRA refresh processes.

### **Self-Logging**

The Self-Logging Program provides that if a Compliance Enforcement Authority finds a registered entity to be eligible for the program after some level of formal review of a registered entity's internal controls around identifying, assessing, and correcting noncompliance, the registered entity may log noncompliance for subsequent review by the ERO Enterprise in lieu of submitting Self-Reports. The log is currently limited to noncompliance posing a minimal risk to the reliability of the BPS. Under the Self-Logging Program, approved registered entities maintain a log with a detailed description of the noncompliance, the risk assessment, and the mitigating activities that have been or will be completed. There is a rebuttable presumption that minimal risk noncompliance logged in this manner will be resolved as Compliance Exceptions (CEs). The 4A audit observed:

- Participation in the program is on average at a nominal 8% of all registered entities within the ERO Enterprise
- Promotion of the program and benefits is not understood or endorsed by the Regional Entities
- Program application processes are inconsistent across the Regional Entities in terms of requirements and qualifications for eligibility according to ROP

In response, NERC Enforcement will conduct a Self-Logging oversight activity in 2023, to evaluate, among other things, any potential improvements to the program considering the confines of FERC orders. In addition, the ERO Enterprise Enforcement Group will reevaluate the program in light of recent FERC orders.

### **ERO Enterprise CMEP and ORCP Staff Training**

NERC CMEP and ORCP staff provide training to ERO Enterprise staff through workshops, instructor-led training events, eLearning opportunities, and oversight of the training and education activities of the Regional Entities. These opportunities focus on identifying gaps in staff knowledge and capabilities related to the risk-based CMEP. Training and educational opportunities concerning Reliability Standards, compliance monitoring and enforcement processes, and other supporting reliability functional areas are provided to other NERC staff, Regional Entity staff, and industry participants at various events through the year. These programs are intended to enhance the knowledge and capabilities of the ERO Enterprise and industry in identifying and addressing risk, thereby improving the reliability of the BPS.

In accordance with Rules of Procedure (ROP) Sections 402 and 502, and Appendix 4C, NERC staff conducted Team Member Training (TM) and Team Leader Training (TL) in April 2022 and October 2022. NERC conducted the April training virtually and the October training was conducted in-person at the Texas RE office. These sessions are conducted over one week concurrently with Certification Team Leader Training and Compliance Investigator Training.

Compliance Investigator Training was a new addition to this weekly training beginning with the October 2022 session. Nearly 70 ERO Enterprise CMEP personnel attended these training sessions.

NERC conducted the 2022 Annual ERO Enterprise CMEP Staff Workshop in April 2022 as a virtual event due to the COVID-19 pandemic. The ERO Enterprise opted for a weeklong event workshop format with opportunities to take different tracks. Over 250 ERO Enterprise CMEP staff attended the workshop. The theme for the 2022 workshop was “The Evolving Role of CMEP Staff”. The workshop covered topics that are essential to the successful implementation of the new Align and Secure Evidence Locker (SEL) tools, and a renewed focus on entity practices and controls. A key focus of the workshop was to ensure CMEP staff clearly understood, and applied, the expectations around documentation. A renewed focus on entity practices and controls assists in ensuring a reliable and secure BPS, and requires CMEP staff to ask questions that go beyond basic compliance. Having a clear understanding of practices and controls assists the ERO Enterprise in better understanding the risk an entity poses, how the entity may perform in the future, and provides valuable feedback to the entity. The ERO Enterprise’s compliance monitoring, enforcement, registration, and certification collaboration groups also continued their work throughout 2022 to ensure processes remained in sync.

The ERO Enterprise scheduled the 2023 Annual ERO Enterprise CMEP Staff Workshop for April 2023, which will be in person. The workshop theme will be “Are We Agile Enough” with continued focus on the transformation of the CMEP. The workshop will include mock audit based training with a strong focus on entity risk and internal controls, ERO Enterprise CMEP process changes, tools, and documentation, as well as technical training on Risk Categories and related Reliability Standards.

## Chapter 2: Oversight Activities

---

### Overview

NERC considers criteria developed by the Compliance and Certification Committee (CCC) to measure the effectiveness and adherence of the Regional Entities to the CMEP, as detailed in CCC procedure document CCCPP-010-7.<sup>11</sup> As NERC develops the objectives used for performing oversight for the various components of compliance monitoring and enforcement, NERC factors in the criteria identified in CCCPP-010-7.

NERC's oversight activities indicate that the Regional Entities are implementing risk-based compliance monitoring according to the program guidelines, and efforts have been successful to improve alignment on various components of risk-based compliance monitoring. Additionally, compliance monitoring oversight activities included identifying ERO Enterprise-wide improvement to inform future training and oversight priorities while monitoring Regional Entity program effectiveness.

In 2022, the compliance and enforcement programs performed a variety of activities designed to support the identified priorities. These activities included review of the ERO Enterprise and registered entities' use of Align and Secure Evidence Locker (SEL), review and update of the ERO Enterprise CMEP IP, oversight of Regional Entity compliance monitoring activities, audit observations of registered entities, and continuous monitoring of information submitted to NERC. These oversight activities assess the effectiveness of program implementation and inform ongoing ERO Enterprise staff training, industry outreach and education, and other opportunities for program improvements. NERC implemented targeted oversight activities to review specific components of the Regional Entity CMEP, which NERC uses to evaluate the oversight priorities. In addition, NERC continued its monthly oversight conference calls with each Regional Entity, which are regularly occurring touchpoints used to address a variety of topics throughout the year. NERC oversight activities identified progress in planning and executing risk-based compliance monitoring, as well as opportunities for continued program enhancements and ERO Enterprise guidance and training.

NERC is ultimately responsible for determining which BPS users, owners, and operators are subject to approved Reliability Standards and for maintaining the corresponding NERC Compliance Registry (NCR) of organizations. In carrying out these responsibilities, NERC relies on the Regional Entities to apply and implement registration criteria as part of the Organization Registration Program. NERC conducts annual official oversight engagements of each Regional Entity as well as monthly touchpoints to discuss ongoing activities. The registration program continued to update the criteria that determine which BPS users are subject to Reliability Standards and maintained the Compliance Registry. The ERO Enterprise has continued its work on NERC Information Technology projects to determine the best path forward for requirements, design, and rollout of IT software. This process has focused on open communications within the ERO Enterprise to understand the needs and various perspectives to align stakeholders successfully. Additionally, the registration program has continued its work with the Organization Registration and Certification Group (ORCG) and the CCC Organization Registration and Certification Subcommittee (ORCS) to align ERO registration and certification work items.

The certification program focused on ERO Enterprise alignment to the revised NERC Rules of Procedure while continuing to seek out opportunities to further process improvements and lessons learned identified over the last several years. NERC provided feedback to Regional Entities for certification engagements and continued to provide training for Regional Entity certification staff. NERC also provided opportunities for registered entities to provide feedback on certification reviews, which indicated that ERO Enterprise certification staff conducted certification activities in a professional, effective, and efficient manner.

---

<sup>11</sup> Criteria for Annual Regional Entity Program Evaluation (November 2022), available at <https://www.nerc.com/comm/CCC/Related%20Files%202013/CCC%20Criteria%20for%20Annual%20Regional%20Entity%20Program%20Evaluation%20v7.pdf>.

## NERC Oversight Priorities

In 2022, NERC executed its Regional Entity compliance monitoring oversight plan to assess the implementation of risk-based compliance monitoring activities. Risk-based compliance monitoring aims to identify, prioritize, and assure effective and efficient mitigation of risks to the reliability and security of the BPS. To support this mission and the ERO Enterprise's goal to have an objective and risk-based compliance monitoring program, NERC prioritized and conducted compliance monitoring oversight activities throughout the year.

NERC evaluated 2022 priorities with the following oversight activities:

- Align and Secure Evidence Locker (SEL) Oversight;
- Annual FFT CE Programs Review
- Compliance Audit Observations

### Align and Secure Evidence Locker Oversight

As part of the rollout of Align and the ERO Enterprise Secure Evidence Locker, NERC is periodically performing oversight of the tool's usage by the ERO Enterprise and registered entities. In addition to continued monitoring of Align and SEL usage, specific program reviews are deployed to adequately evaluate oversight priorities. In Q3 2021, NERC reviewed information submitted by the entity and Regions specifically for Release 1 activities. This review included findings, potential noncompliance, enforcement actions, requests for information, and mitigation reviews. Based on NERC's findings, the Regions and registered entities are overwhelmingly submitting information into Align and the SEL that conform to the ERO Enterprise expectations for data confidentiality and data security. These results were also used to inform CMEP staff training during the 2022 CMEP Spring Workshop and conduct an industry webinar on SEL use on December 5, 2022. In 2023, NERC will conduct additional reviews of CMEP tool usage to evaluate the incorporation of training delivered.

In 2023, NERC will review implemented processes and procedures for Align and SEL related to access provisioning and maintenance of access data. This review will evaluate implemented processes and procedures for adequacy and effectiveness to assure the continued security of CMEP data. NERC will continue to perform oversight activities with objectives to evaluate consistent and appropriate usage of these CMEP tools and will continue to identify opportunities for enhancements to Align and the SEL as well as process improvements.

### Annual Find, Fix Track, and Report and Compliance Exception Programs Review

In November 2022, NERC Enforcement issued a final notice of completion for the 2021 annual review of the FFT and CE programs.<sup>12</sup> NERC and FERC staff jointly reviewed a sample of 29 out of 190 FFT instances of noncompliance and a sample of 32 out of 1,042 CE instances of noncompliance posted by NERC between October 2020 and September 2021. Sampling for the 2021 program year indicated that Regional Entities appropriately processed almost all sampled violation IDs as FFTs or CEs<sup>13</sup> and that all sampled noncompliance were adequately remediated and the root cause of each noncompliance was clearly identified.

NERC determined that the majority of the posted noncompliance were consistent with the evidence provided in response to the annual review and the Regional Entities had detailed and thorough descriptions of the noncompliance. NERC found that, overall, the Regional Entities had detailed and thorough descriptions of the noncompliance and the Regional Entities provided detailed internal case notes to reflect their review and analysis of noncompliance to determine risk and disposition. Additionally, affidavits required for noncompliance processed as FFTs were appropriately signed by officers within the registered entities. In addition, the FFTs and CEs sampled did not contain any material misrepresentations by the registered entities. Based on these findings, NERC concluded that

<sup>12</sup> NERC 2022 Annual FFT and CE Report, Docket No. RC11-6-016 (Nov. 29, 2022), available at <https://www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/NERC%202022%20Annual%20FFT%20and%20CE%20Report.pdf>

<sup>13</sup> Commission staff identified one instance where a CE would have been more appropriately filed as a moderate risk FFT.

there has been consistent improvement in program implementation and significant alignment across the ERO Enterprise, particularly in the processing and understanding of the risk associated with individual noncompliance. NERC and FERC staff initiated the 2022 Annual FFT and CE Programs review in Q4 2022. NERC sent the data requests for the fiscal year 2022 review to Regional Entities and the Regional Entities provided evidence documents in Q4 2022. NERC staff will conduct a thorough review of evidence documents in Q1 2023.

## 2022 Audit Observations

NERC uses audit observations as a tool to evaluate the implementation of the CMEP. Beyond the evaluation of the audit team's practices, NERC may include additional aspects of Regional Entity compliance monitoring programs to better understand processes and implementation of oversight strategies.

### *Objectives*

Observation objectives were developed to follow up on areas identified in the 2022 NERC Regulatory Programs Oversight Plan, gauge the effectiveness of training delivered to CMEP staff in 2021, observe the incorporation of concepts and tools developed in compliance task forces, and gain assurance of continued data security expectations as Regions move from legacy tool usage to Align and the SEL.

In 2022, NERC's focused objectives were to:

- 1) evaluate Regional Entity incorporation of Align and the SEL for Compliance Audits
- 2) evaluate Regional Entity adoption and implementation of risk-based framework concepts in audit planning and throughout the engagement

### *Results*

NERC observed several areas to track for continual improvement of the CMEP risk-based framework. For example, the ERO Enterprise will continue to focus on the incorporation of internal controls in audit planning. In addition, NERC focused on the use of Align and SEL; however, there was insufficient data sampling to make a determination. NERC will discuss result specific details with each Regional Entity in Q1 2023 and will use this information to inform 2023 oversight activity objectives. NERC observed the continued integration of data management best practices during the transition from legacy systems to Align and SEL.

## Post-Audit/Spot Check Feedback

### *Registered Entity Post-Audit/Spot Check Feedback Surveys*

In 2022, NERC received 75 surveys from registered entities within six Regional Entities for recent compliance monitoring activities. Overall, NERC concluded that registered entities agreed that Regional Entity audit staff conducted Compliance Audits in a professional, efficient, and effective manner. Survey responses also indicated opportunities to better communicate registered entity risks, as well as how internal controls information is used during compliance monitoring activities. NERC will continue to monitor this type of registered entity feedback and will work with the Regional Entities to improve communication of processes and results.

## Technical Feasibility Exceptions

In September 2022, NERC filed its *2022 Annual Report on Wide-Area Analysis of Technical Feasibility Exceptions*<sup>14</sup> with FERC. The report noted that the number of registered entities engaging in the Technical Feasibility Exception (TFE) program decreased from 114 registered entities in 2021 to 95 registered entities in 2022. The percentage of TFE activity, such as requests for new TFEs, modifications of existing TFEs, and terminations of TFEs, increased in all Regional Entities except for one Regional Entity since the last report. Most of the program activity includes adjustments in registered entities' counts of TFEs during asset life cycles and migrating from different systems to Align. As a result, the Regional Entities have been able to better evaluate the risk and impact of TFEs and gain a better

---

<sup>14</sup> *Annual Report of NERC on Wide-Area Analysis of Technical Feasibility Exceptions*, Docket Nos. RR10-1 and RR13-3 (Sept. 27, 2022), available at <https://www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/TFE%20Annual%20Report%202022.pdf>.

understanding of the benefit of the TFE process compared to the administrative burden it places on registered entities and Regional Entities. As noted earlier, the number of registered entities that are engaging in the TFE program continues to decline, as does the total number of TFEs. To that end, NERC and the Regional Entities continue to consider alternatives to the current TFE program to alleviate the administrative burden on registered entities and the ERO Enterprise.

### ***Registered Entity Post-Certification Feedback Surveys***

In 2022, NERC received survey responses from registered entities engaged in certification activities. Overall, NERC concluded that registered entities agreed that ERO certification staff conducted certification activities in a professional, efficient, and effective manner. Registered entities commented on the value of the dialogue with team members during the offsite visit as well as flexibility in response to onsite schedule changes to accommodate project uncertainties.

## **BES Registration Exceptions**

In 2012, FERC issued Order No. 773 approving revisions to the definition of the BES and related changes to the ROP. These changes included the addition of Appendix 5C of the ROP containing the Procedure for Requesting and Receiving an Exception from the Application of the NERC Definition of BES. In 2014, FERC accepted NERC's compliance filing with further revisions to the BES definition. FERC highlighted that new elements included in the revised definition of the BES would become subject to relevant Reliability Standards two years after the effective date of the revised definition. The revised BES definition and Appendix 5C of the ROP became effective on July 1, 2014.<sup>15</sup>

NERC provides oversight and direction on several specific items, including the three-year certification process as identified in the ROP Appendix 5C, BESnet instances, and general process steps surrounding necessity of certain elements of the BES.

In 2022, NERC reviewed, the following Exception Requests:

- Disapproved one registered entity's Exclusion Exception Request (from SERC region); and
- Approved one registered entity's Exclusion Exception Request (from MRO region).

## **Oversight of Canadian CMEP Efforts**

The ERO Enterprise's CMEP activities extend into eight Canadian provinces – British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, and Nova Scotia. NERC and three Regional Entities (WECC, MRO, and NPCC) have agreements with applicable governmental authorities in each province that provide the affected Regional Entities and NERC with province-specific compliance monitoring and enforcement responsibilities. NERC and the Regional Entities with responsibilities in Canada provide the NERC Board of Trustees Compliance Committee with periodic updates on Canadian CMEP activities.

---

<sup>15</sup> *Revisions to Electric Reliability Organization Definition of BES and Rules of Procedure*, Order No. 773, 141 FERC ¶ 61,236 (2012); order on reh'g, Order No. 773-A, 143 FERC ¶ 61,053 (2013); order denying reh'g, 144 FERC ¶ 61,174 (2013). See also, North American Elec. Reliability Corp., 146 FERC ¶ 61,199 (2014).



## Chapter 3: Stakeholder Outreach

In 2022, the ERO Enterprise provided numerous outreach opportunities to industry stakeholders through workshops, monthly newsletters, assist visit programs, webinars, podcasts,<sup>16</sup> and other events. These outreach events focused on a variety of topics, including – but not limited to – the following:

- Facility Ratings
- Incident Response
- Align and the SEL
- IRAs and COPs
- Internal Controls
- Cold weather and winterization
- Responding to extreme events, cyber resiliency, gas-electric interface efforts, and planning for resiliency
- Sharing best practices with third party vendors supporting reliable operations

Regional Entities also provided outreach on Reliability Standards that are currently enforceable and pose a higher risk to the reliability and security of the BPS, sharing trends and best practices to mitigate risks. Multiple Regional Entities also highlighted FERC lessons learned from the FERC-led CIP audits of registered entities.<sup>17</sup>

These outreach efforts should help more registered entities achieve the reliability and security goals that the Reliability Standards were intended to support and help registered entities demonstrate compliance.

### Facility Ratings

Facility Ratings play a significant role in planning and operating the BPS. The ERO Enterprise has been actively engaged in identifying and working to mitigate challenges associated with Facility Ratings programs. These efforts include outreach; education; discussions at Regional Entity and NERC technical committee meetings; and monitoring, enforcement, and mitigation activities. Facility Ratings remains an area of focus for the ERO Enterprise’s annual CMEP Implementation Plan.

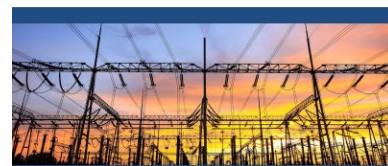
### Themes Report

In October 2022, the ERO Enterprise published “Themes and Best Practices for Sustaining Accurate Facility Ratings”<sup>18</sup>. The report is based on the data and information compiled by the ERO Enterprise over the years of performing monitoring activities and working directly with applicable registered entities. While the identified Facility Ratings program challenges may be attributed to multiple causal



### ERO Enterprise Themes and Best Practices for Sustaining Accurate Facility Ratings

October 20, 2022



<sup>16</sup> Currently Compliant Podcast, which is available at <https://vimeo.com/nerclearning/currently-compliant-podcast/>

<sup>17</sup> FERC has issued several lessons learned reports from its CIP Reliability Audits, which are available at <https://www.ferc.gov/media/2022-staff-report-lessons-learned-commission-led-cip-reliability-audits> (2022 staff report); <https://www.ferc.gov/media/2021-report-commission-led-cip-audits> (2021 staff report); <https://cms.ferc.gov/sites/default/files/2020-10/2020%20CIP%20Audits%20Report.pdf> (2020 staff report); <https://www.ferc.gov/legal/staff-reports/2019/2019-report-audits.pdf> (2019 staff report); <https://www.ferc.gov/legal/staff-reports/2019/2018-report-audits.pdf> (2018 staff report); and <https://www.ferc.gov/legal/staff-reports/2017/10-06-17-CIP-audits-report.pdf> (2017 staff report).

<sup>18</sup> Link to the Themes and Best Practices for Sustaining Accurate Facility Ratings:

<https://www.nerc.com/comm/RSTC/Documents/ERO%20Enterprise%20Themes%20and%20Best%20Practices%20for%20Sustaining%20Accurate%20FR%20-%20Final%20-%20Oct-20-22.pdf>

factors, the ERO Enterprise determined that issues have primarily been associated with the following broader themes:

- Theme 1: Lack of Awareness
- Theme 2: Inadequate Asset and Data Management
- Theme 3: Inadequate Change Management
- Theme 4: Inconsistent Development and Application of Facility Ratings Methodologies

The ERO Enterprise encourages entities to reach out to Regional Entity staff as well as their industry peers, to share information and lessons learned, ask questions, and request assistance if needed in the area of Facility Ratings.

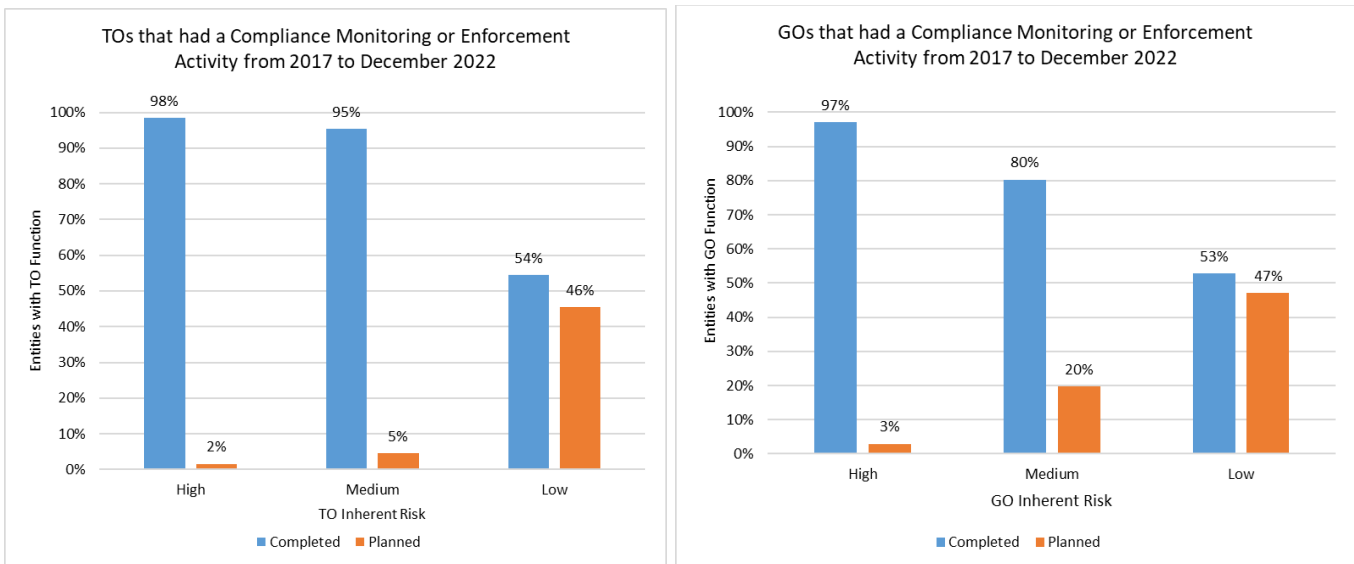
**Facility Ratings Call to Action Update**

Since November 2021’s call to action, the ERO Enterprise has continued to use a risk-based approach through its CMEP monitoring activities to assess and address risk from inaccurate Facility Ratings.

The call to action supports the development and sustainability of registered entity risk-based Facility Ratings programs and resolution of Facility Ratings noncompliance using existing tools. The ERO Enterprise has taken a risk-based approach in three key components of its call to actions; (1) prevention; (2) assessment of current conditions; and (3) recovery, including gap closure.



The following charts demonstrate the percentage of high, medium and low inherent risk TOs and GOs with completed Facility Rating-related monitoring activity or an enforcement engagement since 2017.

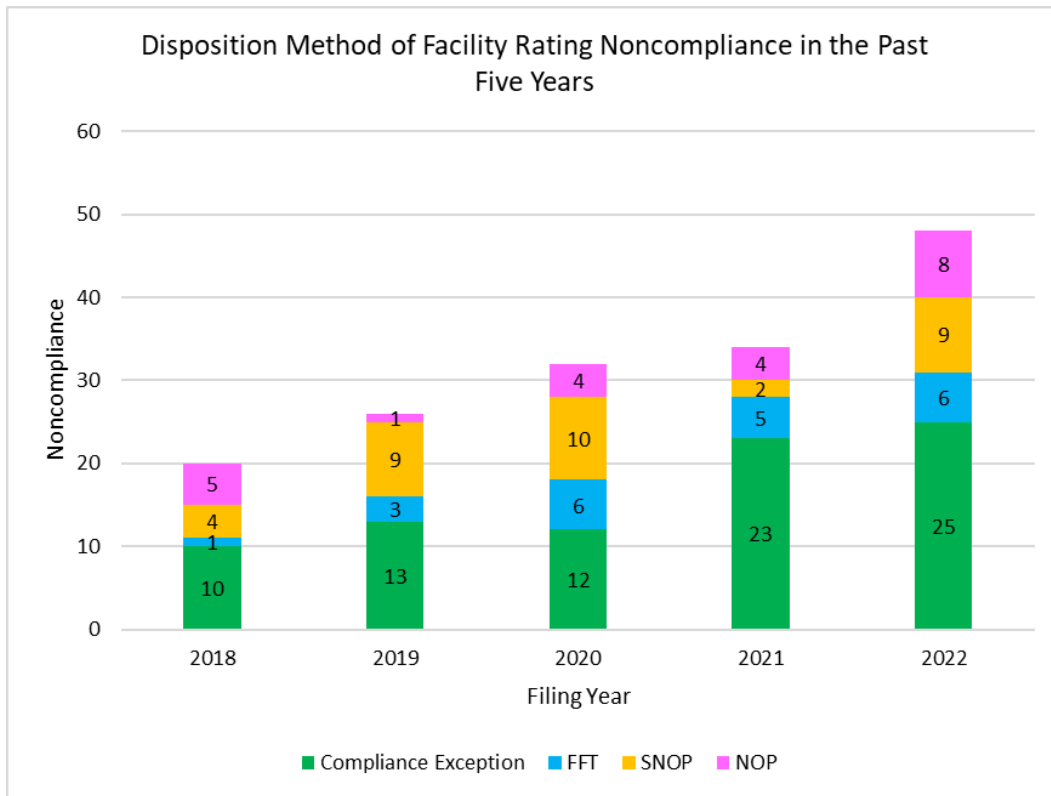


**Figure 1: Facility Rating CMEP Activities by Function and Inherent Risk**

**Risk-Based Enforcement dispositions for Facility Rating Matters**

The disposition of Facility Rating noncompliance is based on facts and circumstances involved and the risk posed to the reliable operation of the grid. While the ERO Enterprise filed five Full NOPs involving Facility Ratings violations

with FERC in 2022, four of which involved serious risk violations related to the Facility Ratings,<sup>19</sup> the ERO Enterprise also disposed of a substantial number of other Facility Ratings noncompliance via the CE and FFT disposition methods as shown in the figure below.



**Figure 2: Disposition Methods of Facility Rating Noncompliance**

## Incident Response

The Incident Reporting and Response Planning Reliability Standard (CIP-008-6) modifications were intended to augment the reporting of Cyber Security Incidents, to include incidents that might facilitate subsequent efforts to harm the reliable operation of the Bulk Electric System (BES). Since the January 1, 2021 effective date of the revised Reliability Standard (CIP-008-6), there have been limited reports to E-ISAC of Reportable Cyber Security Incidents or Cyber Security Incidents that were determined to be an attempt(s) to compromise an applicable system.

As written, the current Reliability Standard allows registered entities to define “attempt(s) to compromise” and the processes for which the definition is applied. Many sampled registered entity programs include provisions that “nefarious” intent must exist to meet the definition of attempt(s) to compromise, or there must have been an actual impact, to meet the reporting threshold. In addition, most programs include a provision that allows a level of discretion by registered entity staff.

ERO Enterprise staff, in collaboration with NERC Standards staff, introduced a Standard Authorization Request to accomplish the following:

<sup>19</sup> The five Full NOPs involving Facility Ratings violations were NP22-14-000, NP22-19-000, NP22-20-000, NP22-33-000 and NP23-1-000. Additional details about these Full NOPs are available at [https://www.nerc.com/pa/comp/CE/Pages/Actions\\_2022/Enforcement-Actions-2022.aspx](https://www.nerc.com/pa/comp/CE/Pages/Actions_2022/Enforcement-Actions-2022.aspx)

- Address gaps permitting a subjective determination of “attempt(s) to compromise”; and
- Provide an expectation for thresholds of “attempt(s) to compromise”

## **Align and Secure Evidence Locker Outreach**

In December 2022, NERC conducted a webinar to stakeholders with recommendations of 2021 Align and SEL oversight as well as additional guidance on SEL best practices. The best practices presented on were identified during pilot compliance monitoring engagements conducted in Q2-Q3 2022. As part of continuing efforts to improve the user experience with Align and SEL, NERC will continue to collect and post curated responses to frequently asked questions on NERC’s website. In 2023, this information will move from a separate NERC Initiative section to the Compliance Monitoring and Enforcement Program section.

## **Presentations at the CCC Open Meetings**

Each quarter, the CCC has a focused discussion with the ERO Enterprise to improved industry collaboration and communication. For 2022, the ERO Enterprise CMEP staff supported the following focused discussions:

- Compliance Guidance Policy – during the Q2 2022 meeting, ERO Enterprise staff presented on Implementation Guidance and Practice Guides for awareness on the process for receiving and endorsing Implementation Guidance and the process for developing Practice Guides.
- Compliance Oversight Plans – during the Q3 2022 meeting, ERO Enterprise staff presented on COPs, providing insights into the data and considerations factored into COPs.
- Align and SEL – during the Q4 2022 meeting, ERO Enterprise staff presented on Align and SEL, providing awareness on the status of the rollouts and current usage.
- Lifecycle of a Violation – during the Q4 2022 meeting, ERO Enterprise Enforcement staff presented on the lifecycle of a violation, providing insight into the Regional Entities’ processes for assessing risk, analyzing mitigation and resolving noncompliance.

## **Compliance Guidance**

In late 2015, the NERC Board of Trustees approved the Compliance Guidance policy, which includes Implementation Guidance and CMEP Practice Guides. Pre-Qualified Organizations or Standards Drafting Teams develop Implementation Guidance, which provides industry-vetted and ERO Enterprise-endorsed examples and approaches to illustrate how registered entities could comply with a Reliability Standard. The ERO Enterprise develops the CMEP Practices Guides to address how ERO Enterprise CMEP staff execute compliance monitoring and enforcement activities rather than how to implement the Reliability Standard.

During 2022, the ERO Enterprise received four new proposed Implementation Guidance documents from Pre-Qualified Organizations and Standards Drafting Teams. The ERO Enterprise endorsed three and no endorsement decision was made on the fourth by the end of 2022. The ERO Enterprise also developed and posted three CMEP Practice Guides in 2022.

## Chapter 4: Year in Review

---

In 2022, the ERO Enterprise made significant progress in the continued rollout of Align and SEL deployments and improvements, tracked the progress of implementation of the 2021 Cold Weather Inquiry recommendations, resolved a significant amount of older noncompliance, and completed a variety of other CMEP and ORCP activities. Additional details about these activities are provided below.

### Align and SEL

The ERO Enterprise is committed to CMEP effectiveness and has invested in the Align and SEL tools to improve security, automation/efficiency and harmonization/consistency. In 2022, Align and SEL key initiatives included performance related improvements, release deployments, functional enhancement prioritization, and legacy data migration and system retirement.

### Performance Related Improvements

In Q1 2022, the ERO Enterprise implemented changes to improve the performance and stability of Align, which included refactoring queries and reports for efficiencies. In addition, the ERO Enterprise created an additional reporting instance to ensure the reporting universe did not affect Align user interface stability. The ERO Enterprise also completed a re-design of the periodic data submittal (PDS) and Self-Certification modules to address processing issues.

### Release 4, 4.1, and 4.5 Deployment

The purpose of the Align Release 4 project was to develop a tool to perform, test, and implement high priority user stories that were not implemented in Release 3, as well as enhancements to Compliance Audit, Spot Check, Compliance Monitoring scheduling, IRA, and COP functionality. During the initial development, the ERO Enterprise prioritized user stories and began identifying reporting requirements. Release 4 included three production deployments: 1) Release 4.0 was deployed in Q2 2022 with Compliance Audit, Spot-Check, and Scheduling enhancements; 2) Release 4.1 was deployed in Q3 2022 with audit specific enhancements and bugs; and 3) Release 4.5 was deployed in Q4 2022 with IRAs and COPs.

### Functional Enhancement Prioritization

In Q3 2022, the ERO Enterprise began reviewing a functional enhancement list. This review evaluated priority by focusing on user stories that will improve CMEP functionality, enhance functional users' experience, and improve productivity efficiencies.

Specifically, the AUG and Product Management Team prioritize enhancements in the following four levels, with Level 1 items having the highest priority:

- Level 1 – highest priority matters, including degraded system functionality with no work-around available, changes required to maintain compliance with NERC Rules of Procedure, and issues that adversely impact a workflow;
- Level 2 – matters involving unendurable burdens on users, including temporary workarounds with decreased efficiencies;
- Level 3 – matters unrelated to temporary solutions that further increase efficiencies;
- Level 4 – lowest priority matters that are unrelated to functionality, but provide clarity, including correction of typos, addition of help text, and modifications to the user interface (e.g., filters or columns).

## Legacy Data Migration and System Retirement

The ERO Enterprise is migrating historical data from legacy CMEP systems into the Align tool.<sup>20</sup> This migration includes data associated with violations that NERC and the Regional Entities closed or dismissed within the five-year retention period. The migration of legacy data provides relevant historical context of violations for the registered entities, Regional Entities, NERC, and FERC. In 2022, two Regional Entities migrated their open enforcement action noncompliance from their legacy system into Align.

## Cold Weather Inquiry

Throughout 2022, a joint FERC, NERC, Regional Entity team monitored progress in implementing the 28 recommendations included in the 2021 Joint Inquiry report<sup>21</sup>. Currently, one recommendation has been completed and the remaining 27 recommendations are in progress. FERC and NERC staff presented on the status of the recommendations at the December 2022 Open Commission Meeting.<sup>22</sup>

---

<sup>20</sup> The legacy systems include the Web Compliance Data Management System (CDMS), Compliance Information Tracking System (CITS), and Compliance Reporting, Analysis, and Tracking System (CRATS).

<sup>21</sup> The February 2021 Cold Weather Outages in Texas and the South Central United States: FERC, NERC, and Regional Entity Staff Report (Nov. 2021), available at <https://www.ferc.gov/media/february-2021-cold-weather-outages-texas-and-south-central-united-states-ferc-nerc-and>.

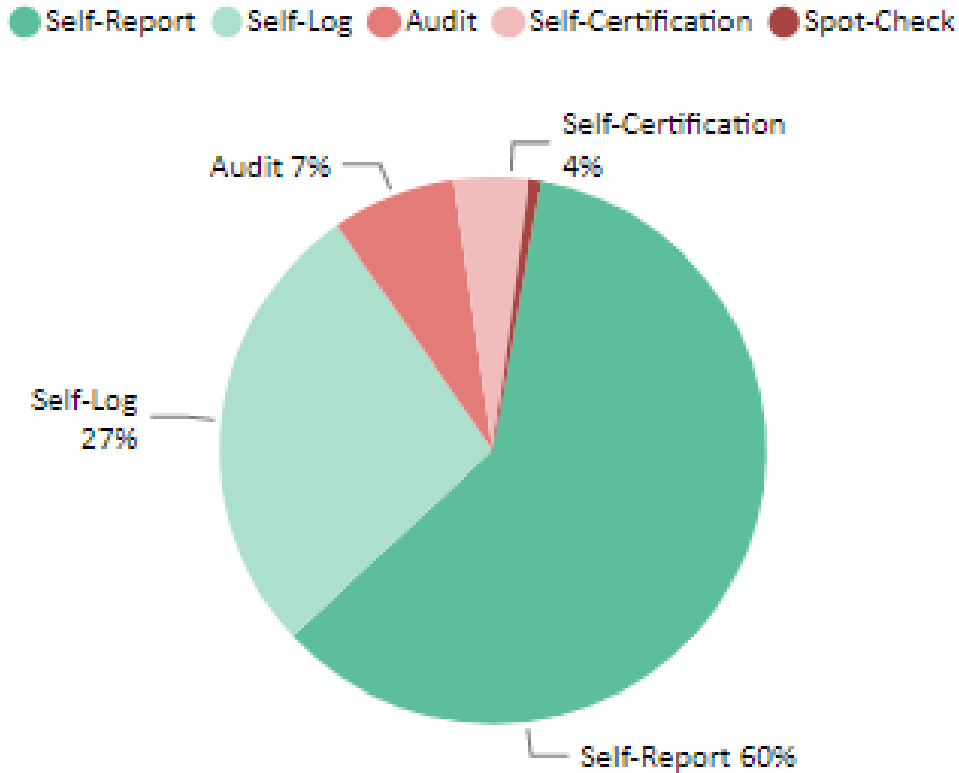
<sup>22</sup> Staff Presentation, The February 2021 Cold Weather Outages in Texas and the South Central United States (Dec. 2022), available at <https://ferc.gov/news-events/news/presentation-february-2021-cold-weather-outages-texas-and-south-central-united>.



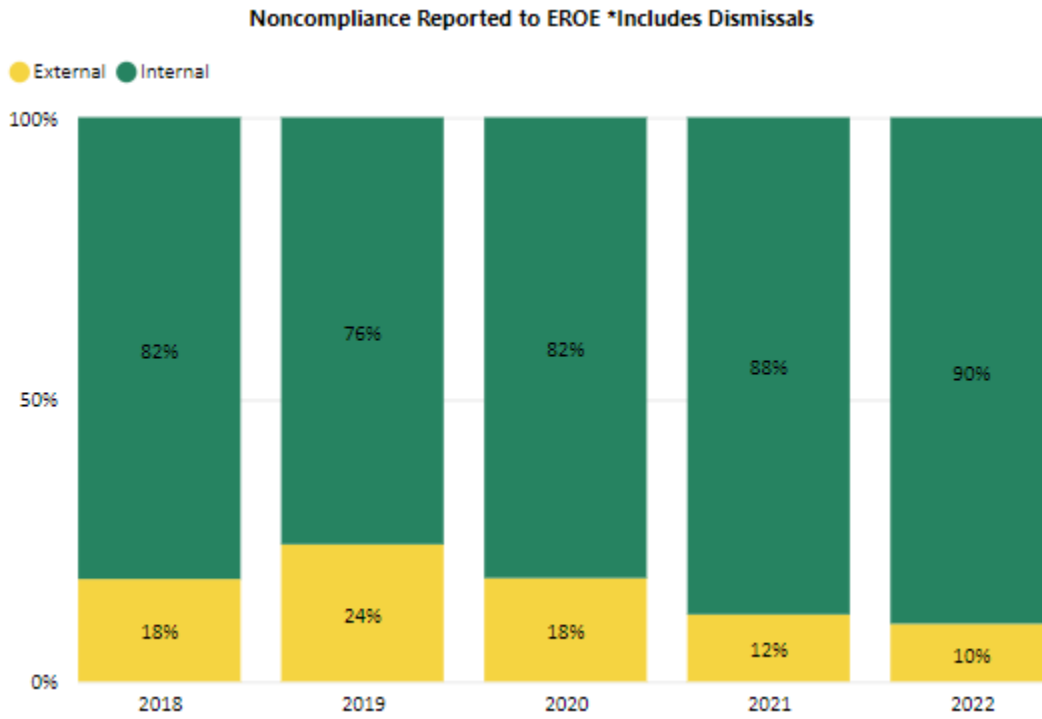
## Noncompliance Discovery Methods

The ERO Enterprise looks for high levels of self-reported noncompliance as indicators that registered entities have good detective controls and strong cultures of compliance. Over the last five years, registered entities have self-identified approximately 80-90% of reported noncompliance.

In 2022, approximately 90% of reported noncompliance was self-identified by registered entities.



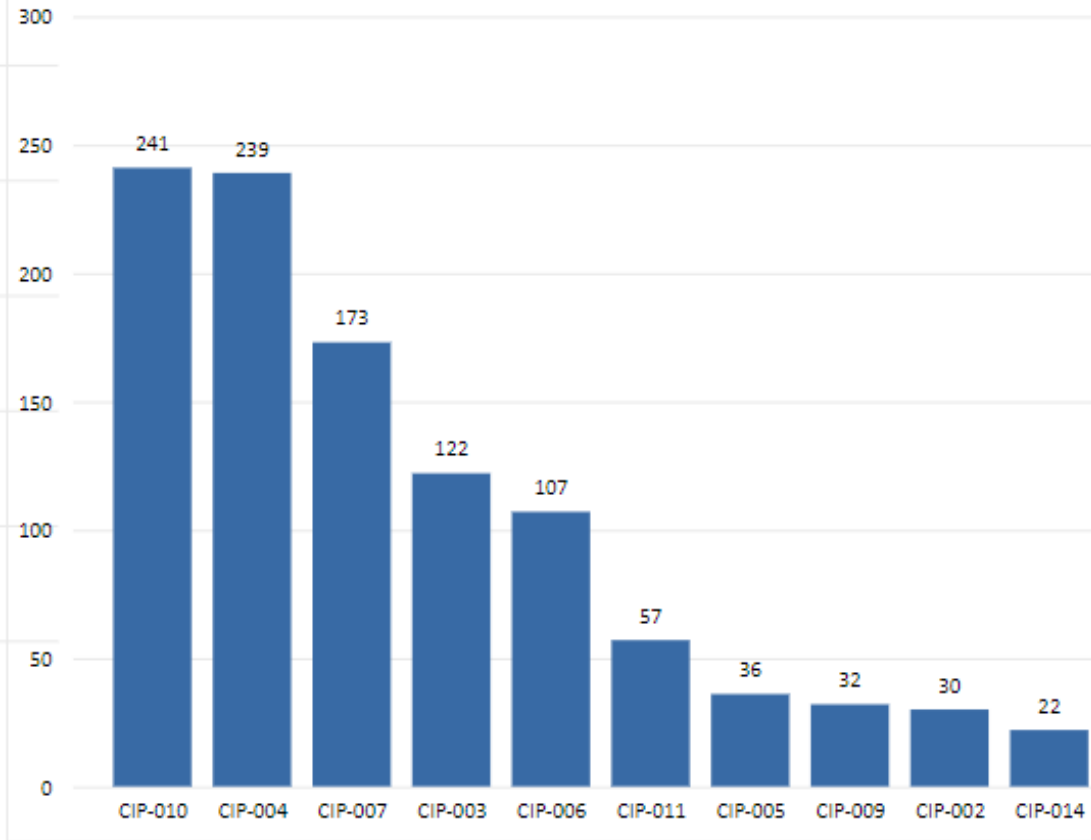
**Figure 3: 2022 Noncompliance by Discovery Method**



**Figure 4: Internally and Externally Discovered Noncompliance by Year Reported**

## Top 10 CIP Noncompliance Reported in 2022

In 2022, the most frequently reported noncompliance involving the CIP Standards included CIP-010, CIP-004, and CIP-007, which all involve high frequency conduct.



Standard	R1.	R2.	R3.	R4.	R5.	Total
CIP-010	194	20	21	6		241
CIP-004		26	26	96	91	239
CIP-007	15	86	6	19	47	173
CIP-003	12	99	7	4		122
CIP-006	39	59	9			107
CIP-011	51	6				57
CIP-005	19	17				36
CIP-009	4	9	19			32
CIP-002	21	9				30
CIP-014	12	3		4	3	22
<b>Total</b>	<b>367</b>	<b>334</b>	<b>88</b>	<b>129</b>	<b>141</b>	<b>1059</b>

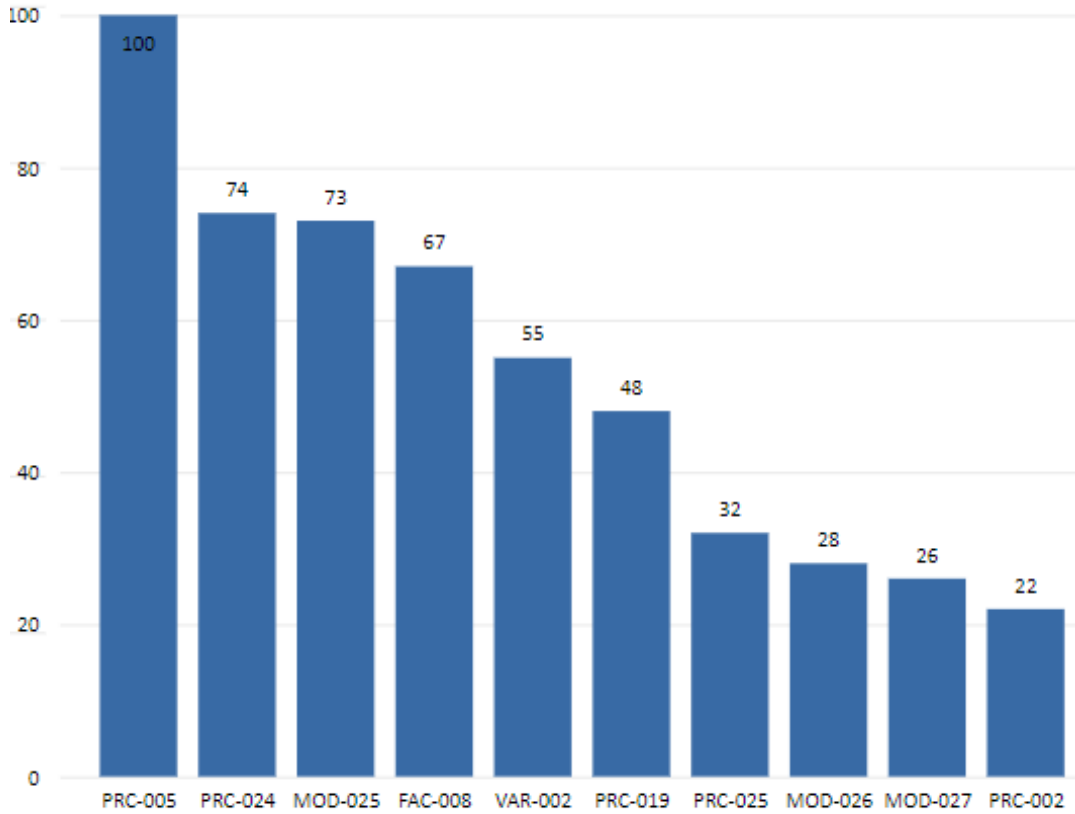
CIP Requirements involving high-frequency conduct, such as CIP-010 R1 (configuration change management), CIP-004 R4 (access management program) and R5 (access revocation), CIP-007 R2 (security patch management) and R5 (system access control), and CIP-006 R2 (visitor control program), were among the most frequently reported CIP noncompliance in 2022.

Similarly, CIP Requirements that impact a large number of registered entities, such as CIP-003 R2, which requires registered entities with assets containing low impact BES Cyber Systems to implement one or more documented cyber security plans for those low impact BES Cyber Systems, were among the most frequently reported CIP noncompliance in 2022.

**Figure 5: CIP Noncompliance Reported in 2022**

## Top 10 O&P Noncompliance Reported in 2022

In 2022, the most frequently reported noncompliance involving the O&P Standards included PRC-005, which involves high frequency conduct, FAC-008, which has been an ERO Enterprise focus area for several years, and several Standards involving coordination or verification of generator data (e.g., PRC-024, MOD-025, PRC-019, PRC-025, MOD-026, and MOD-027).



Standard	R1.	R2.	R3.	R4.	R5.	R6.	R8.	R10.	Total
PRC-005	2		98						100
PRC-024	34	38	2						74
MOD-025	37	36							73
FAC-008		7	3			51	6		67
VAR-002	6	20	25	3		1			55
PRC-019	37	11							48
PRC-025	32								32
MOD-026		17	2	6		3			28
MOD-027		17	1	7	1				26
PRC-002	6	5	5	4	1			1	22
<b>Total</b>	<b>154</b>	<b>151</b>	<b>136</b>	<b>20</b>	<b>2</b>	<b>55</b>	<b>6</b>	<b>1</b>	<b>525</b>

O&P Requirements involving high-frequency conduct, such as PRC-005 R3 (Protection System, Automatic Reclosing, and Sudden Pressure Relaying Maintenance) and VAR-002 R2 and R3 (Generator Operation for Maintaining Network Voltage Schedules), were among the most frequently reported O&P noncompliance in 2022.

FAC-008 R6 (Facility Ratings) also saw high levels of reported O&P noncompliance in 2022, consistent with recent trends.

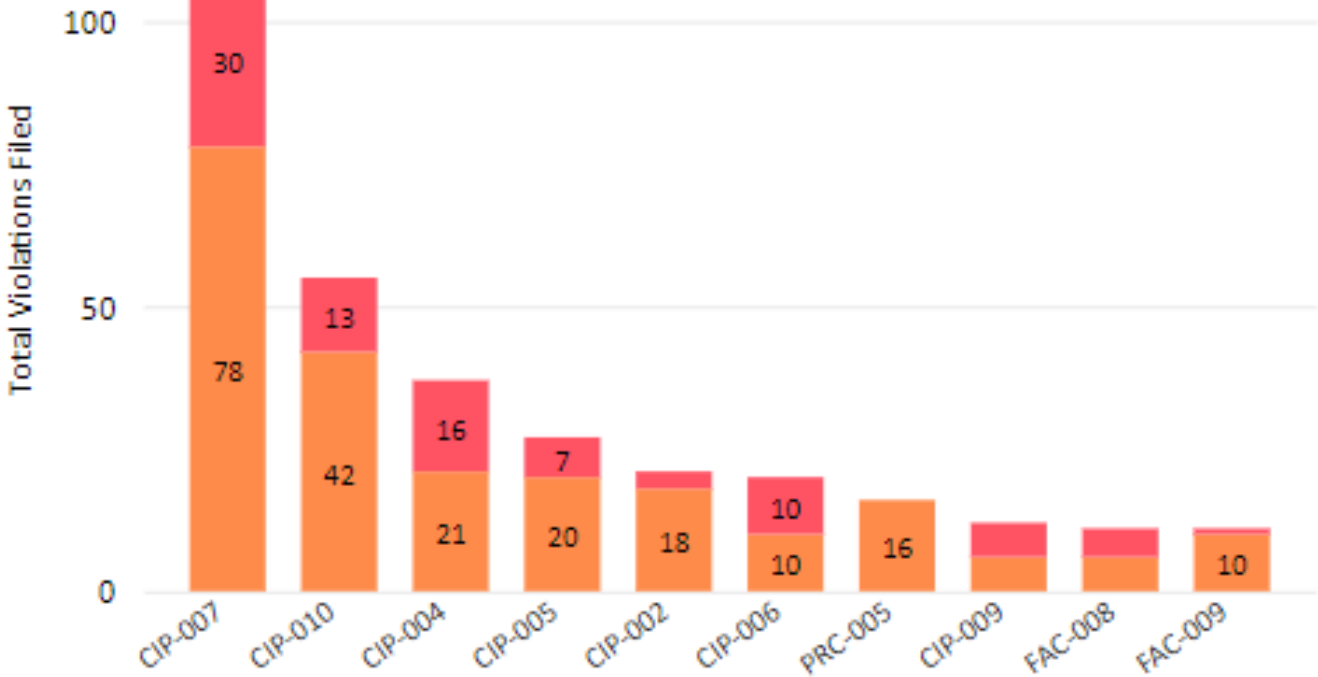
Similarly, O&P Requirements that involved coordination or verification of generator data, such as PRC-019 R1, PRC-024 R1 and R2, PRC-025 R1, MOD-025 R1 and R2, MOD-026 R2, and MOD-027 R2, were among the most frequently reported O&P noncompliance in 2022.

**Figure 6: O&P Noncompliance Reported in 2022**

### Top 10 Serious and Moderate Risk Noncompliance Filed in 2022

Of the serious and moderate risk noncompliance filed in 2022, CIP Standards represented seven of the top ten most filed serious and moderate risk Standards. Violations of CIP-007 and CIP-010 filed in 2022 had the most serious and moderate risk CIP issues. Violations of PRC-005 and FAC-008/FAC-009 (Facility Ratings) filed in 2022 had the most serious and moderate risk O&P issues.

● Moderate ● Serious

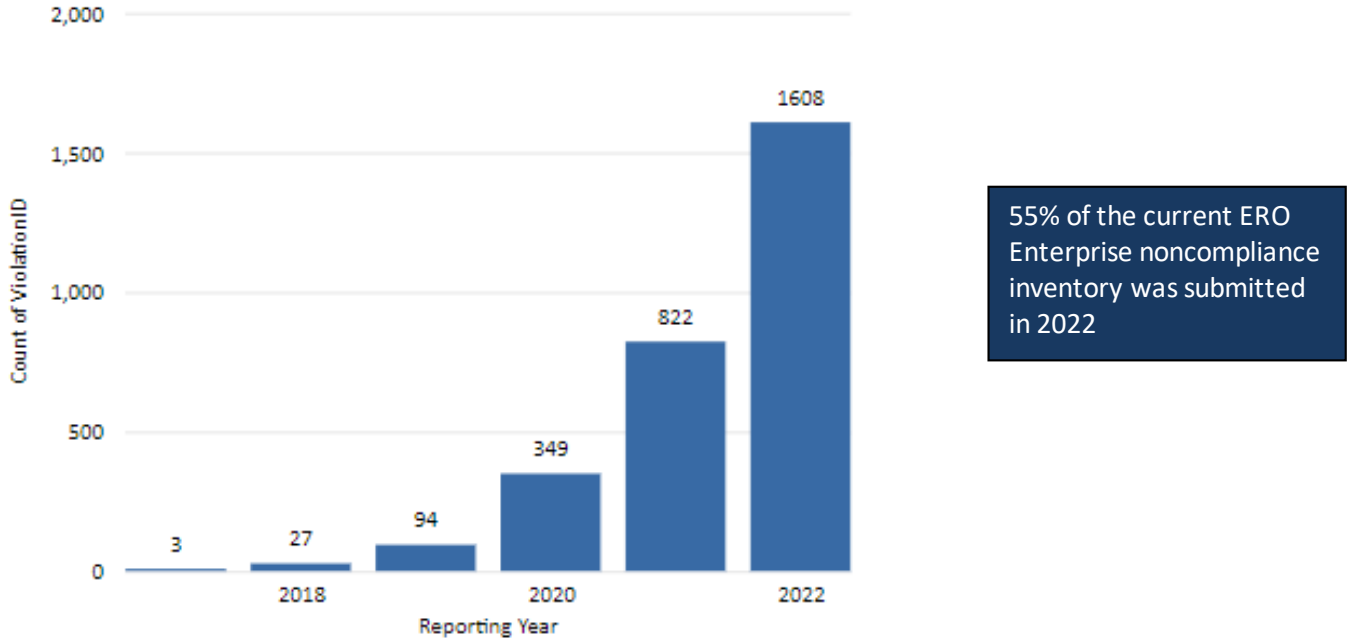


Standard	Moderate	Serious	Total
CIP-007	78	30	108
CIP-010	42	13	55
CIP-004	21	16	37
CIP-005	20	7	27
CIP-002	18	3	21
CIP-006	10	10	20
PRC-005	16		16
CIP-009	6	6	12
FAC-008	6	5	11
FAC-009	10	1	11
<b>Total</b>	<b>227</b>	<b>91</b>	<b>318</b>

**Figure 7: Serious and Moderate Risk Noncompliance Filed in 2022**

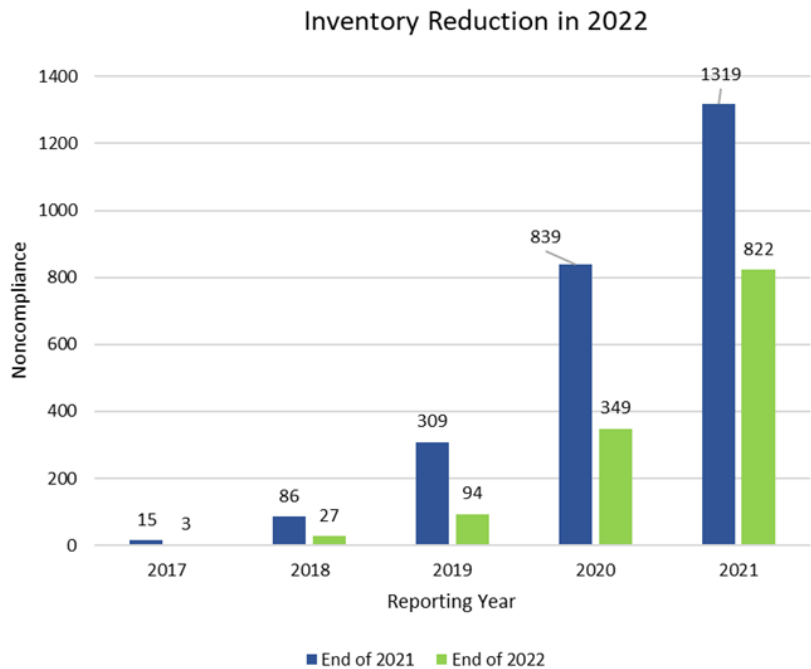
## Focus on Reducing Older Inventory

The ERO Enterprise’s open noncompliance inventory consists of noncompliance reported to or identified by the Regional Entities or NERC that has not yet been processed by filing with FERC (Full NOPs and SNOPs), submission to FERC (FFTs and CEs), or being dismissed. The ERO Enterprise strives to process noncompliance in a timely manner such that its open noncompliance older than two years old is kept to a minimum. In 2022, the ERO Enterprise focused on reducing the volume of its oldest open inventory and made substantial reductions, as noted below.



**Figure 8: Open Inventory at End of 2022**

In 2022, the ERO Enterprise processed nearly 70% of its open noncompliance from 2019 and earlier, and nearly 50% of its noncompliance from 2021 and earlier.

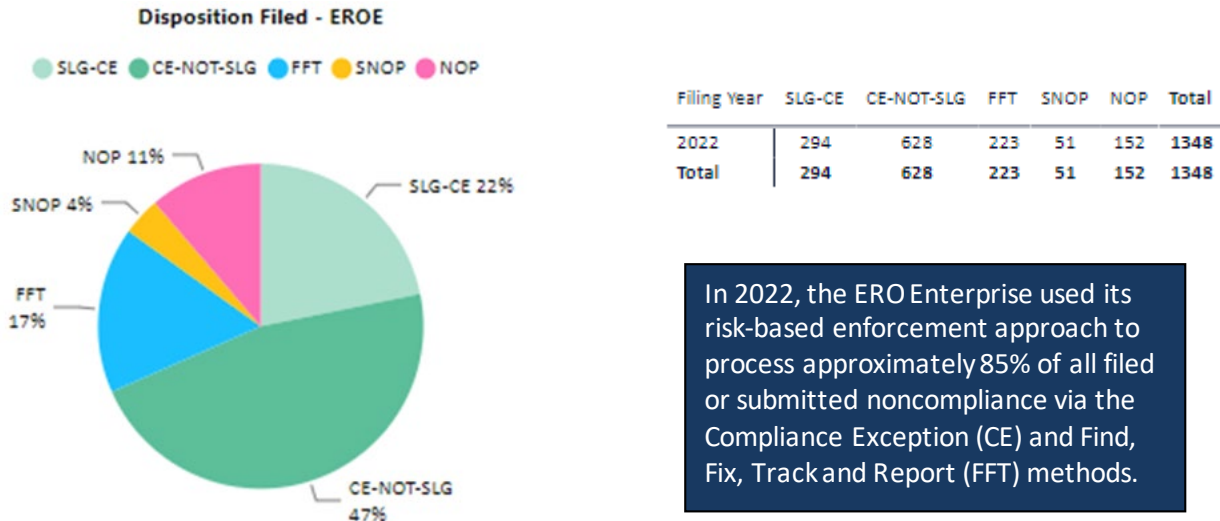


**Figure 9: Reduction in Older Inventory at End of 2022**



## Disposition of Noncompliance

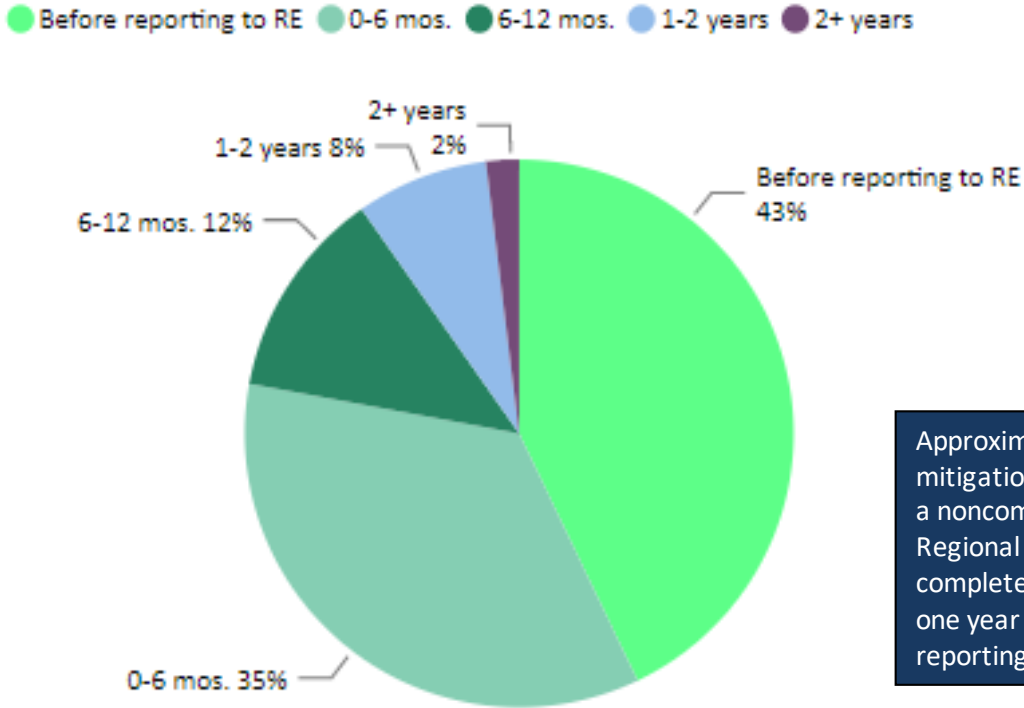
In 2022, the ERO Enterprise continued to use a risk-based enforcement approach to process approximately 68% of filed or submitted noncompliance as CEs and 17% as FFTs, disposition methods involving minimal and moderate risk noncompliance that do not involve settlement agreements or monetary penalties. This is consistent with prior years, in which the combined percentage of CEs and FFTs ranged from approximately 80 to 90%. The remaining 15% of processed noncompliance was resolved using the SNOP and Full NOP disposition methods, which address more significant noncompliance and usually involve settlement agreements and monetary penalties and/or non-monetary sanctions.



**Figure 10: Disposition of Noncompliance Processed in 2022**

## Mitigation of Noncompliance

All noncompliance prior to 2017 have completed mitigation. 86% of reported noncompliance from 2017 to December 30, 2022 have completed mitigation. The chart below shows mitigation timeframe for noncompliance that have completed mitigation.



Approximately 80% of completed mitigation occurs within six months of a noncompliance being reported to a Regional Entity, and 90% of completed mitigation occurs within one year of the noncompliance reporting date.

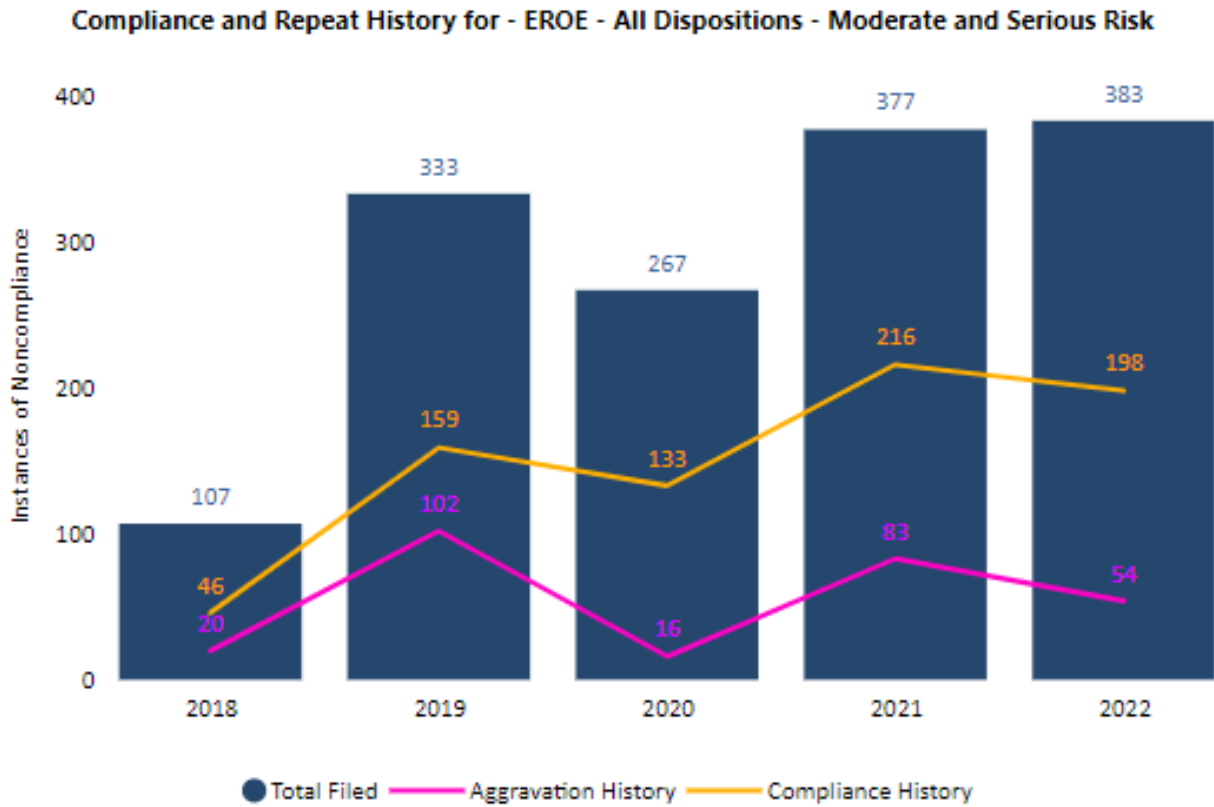
**Figure 11: Mitigation of Noncompliance**

## Compliance History

The ERO Enterprise monitors compliance history (defined as a relevant prior violation of the same or similar Reliability Standard and Requirement) and repeat noncompliance with similar conduct (defined as a prior violation that stemmed from similar actions or conduct). The ERO Enterprise monitors these cases to further explore the relationship of prior mitigation to repeat noncompliance and to identify any additional areas of focus and future actions.

The figure below shows all filed moderate and serious risk noncompliance in the past five years including those with relevant compliance history and those with compliance history involving similar conduct. Noncompliance with similar conduct is a subset of the wider group of repeat noncompliance, in which the entity’s current noncompliance involves similar conduct or a similar cause as prior violations of the same or similar Standard and Requirement. Such situations could result in aggravation of the disposition method or aggravation of a penalty for the current noncompliance.

The ERO Enterprise will continue to analyze the information as the year progresses and highlight any notable trends in future reports.



Moderate and serious risk noncompliance with aggravating compliance history remains a small percentage of all filed moderate and serious risk noncompliance, averaging approximately 19% over the last five years.

**Figure 12: Compliance History for Moderate and Serious Risk Noncompliance**

## Reliability Standard Audit Worksheets

During 2022, NERC issued announcements for nine Reliability Standard Audit Worksheets (RSAWs) available on the NERC public website.<sup>23</sup>

## Certification Completions

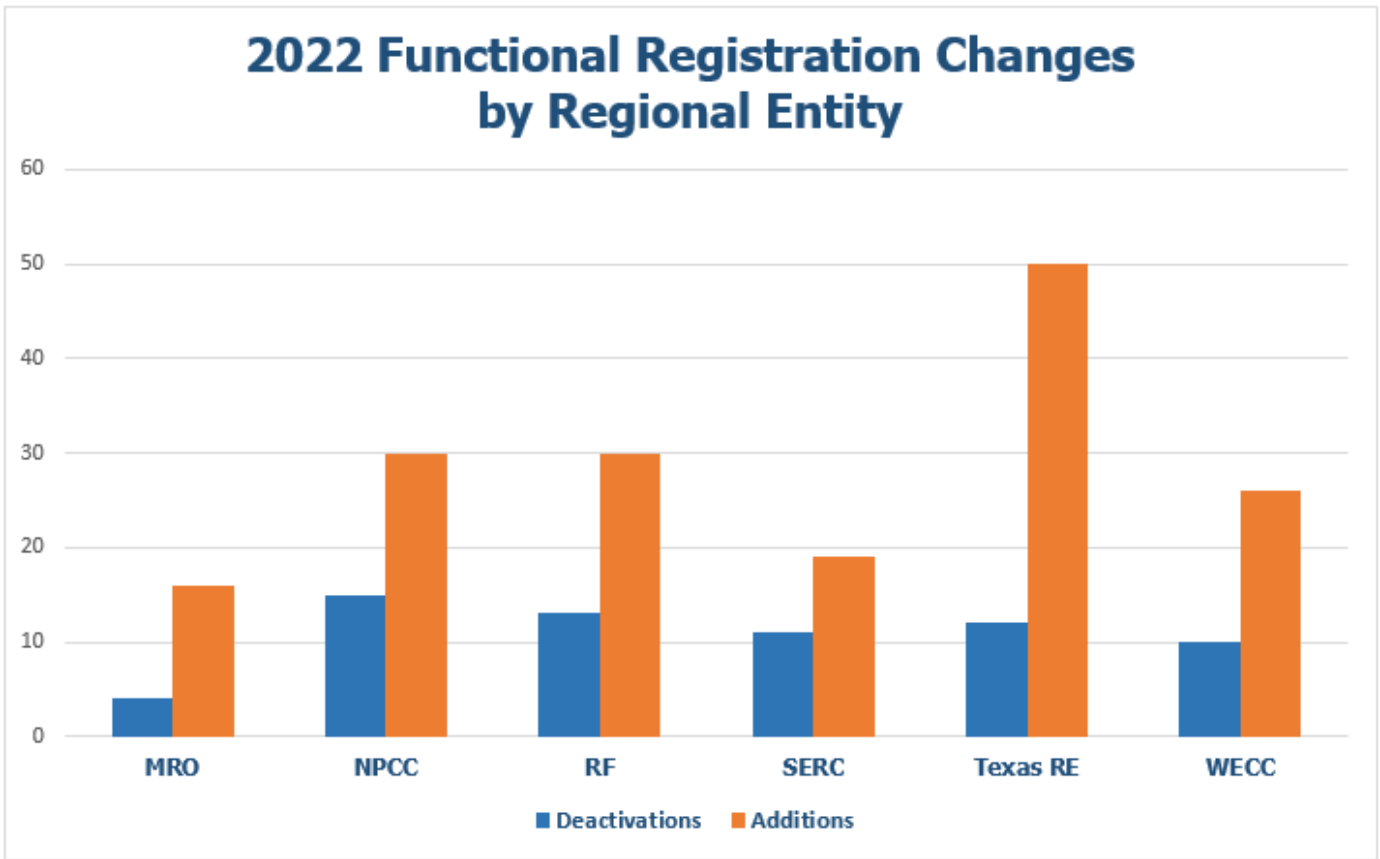
During 2022, no full certifications were completed, although there are four underway. ERO Enterprise staff performed nine certification reviews already certified and operational entities, including two footprint changes, two control room relocations, and five Energy Management Systems (EMS) upgrades. For nine certification review triggers, the Regional Entities and NERC made a mutual decision to pursue a lesser activity.

---

<sup>23</sup> Reliability Standard Audit Worksheets (RSAWs), available at [https://www.nerc.com/pa/comp/Pages/Reliability-Standard-Audit-Worksheets-\(RSAWs\).aspx](https://www.nerc.com/pa/comp/Pages/Reliability-Standard-Audit-Worksheets-(RSAWs).aspx).

## Functional Registration Changes by Region

The figure below depicts registration change activity by Regional Entity in 2022. In 2022, the ERO Enterprise processed 236 registration changes, with a significant amount representing new functions in Texas RE.

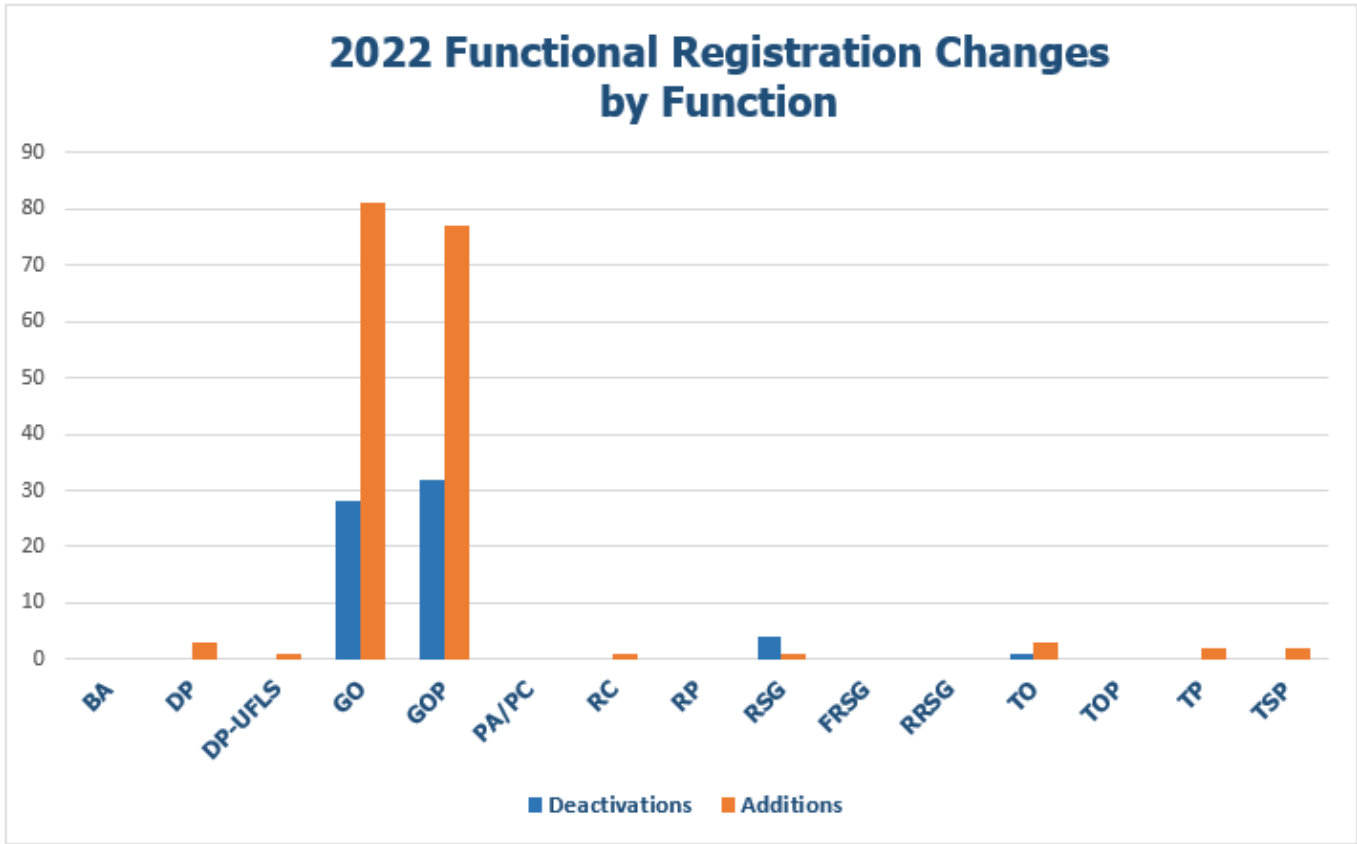


	MRO	NPCC	RF	SERC	Texas RE	WECC
Deactivations	4	15	13	11	12	10
Additions	16	30	30	19	50	26

**Figure 13: 2022 Functional Registration Changes by Regional Entity**

## Functional Registration Changes by Function

The figure below depicts registration change activity by function. In 2022, the ERO Enterprise processed 236 registration changes, the majority of which were Generator Owners (GO) and Generator Operators (GOP).



	DP	DP-UFLS	GO	GOP	RC	RSG	TO	TP	TSP
Deactivations	0	0	28	32	0	4	1	0	0
Additions	3	1	81	77	1	1	3	2	2

**Figure 14: 2022 Functional Registration Changes by Function**

### Registration Change Basis

In 2022, NERC processed 65 function deactivations. NERC seeks justification from each Regional Entity when approving functional registration deactivation. The table below shows the bases for 2022 registration changes.

2022 Registration Change Basis	
Consolidated to another mutually-owned Registered Entity	4
Determined to not meet Registration Criteria	7
Shutdown	12
Sold to another Registered Entity	14
Compliance responsibility assumed by another Registered Entity	28

**Figure 15: 2022 Bases for Functional Registration Deactivations**

## Program Alignment Process

Throughout 2022, the ERO Enterprise continued to align CMEP activities across North America. The ERO Enterprise Program Alignment Process<sup>24</sup> (Program Alignment) provides a structure for collecting, reviewing, resolving, and communicating differences in practices across the ERO Enterprise. Alignment issues come to the ERO Enterprise from a variety of sources, including industry submittals, NERC oversight, and regional feedback. Examples of issues considered in 2022 include CMEP Practice Guides regarding (1) considerations for TPL-001-4 and TPL-001-5.1 Table 1 Contingencies; (2) effective risk assessments under CIP-014-3 R1 to identify Transmission station(s) and substation(s) that, if rendered inoperable or damaged, could result in instability, uncontrolled separation, or Cascading within an Interconnection; and (3) modeling and studies involving distributed energy resources.

The Issues and Recommendations tracking spreadsheet provides transparency on these issues and their associated recommendations or resolutions. NERC continued to use the Issues and Recommendations tracking spreadsheet to track not only entity submissions but also ERO Enterprise alignment efforts, such as CMEP Practice Guides under development.

## FERC Filings and Orders and Other Developments of Note

In 2022, FERC issued a number of Notices of Proposed Rulemaking (NOPRs), Notices of Inquiry (NOIs), and Orders impacting the CMEP and ORCP programs. Of note are issuances related to Transmission Planning, Generator Interconnection, and inverter-based resources (IBRs). These issuances and joint responses by NERC and the Regional Entities address the reliability and security needs of the BPS presented by the transforming grid, evolving resource mix, and extreme weather.<sup>25</sup> Additionally, some of these issuances and related ERO Enterprise responses address new registration requirements of IBRs, new or updated Reliability Standards for IBRs and requirements for dynamic-line ratings (DLRs)<sup>26</sup>, and modifications to transmission planning Reliability Standards and generator interconnection procedures and agreements.

## Newly Enforceable NERC Reliability Standards in 2023

In 2023, several updated Reliability Standards will become newly enforceable.

<sup>24</sup> Information about the ERO Enterprise Program Alignment Process is available at

<http://www.nerc.com/pa/comp/Pages/EROEnterProAlign.aspx>

<sup>25</sup> NOPR re Building for the Future Through Electrical Regional Transmission Planning, RM21-17, available at

[https://elibrary.ferc.gov/eLibrary/filelist?accession\\_number=20220421-3090](https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20220421-3090); NOPR on Transmission System Planning Performance

Requirements for Extreme Weather, RM22-10, available at [https://elibrary.ferc.gov/eLibrary/filelist?accession\\_number=20220616-3084](https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20220616-3084);

ERO-E comments on Transmission Planning NOPRs, RM22-10 and RM21-17, available at

[https://www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/Comments\\_TPL-001%20NOPR.pdf](https://www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/Comments_TPL-001%20NOPR.pdf) and

<https://www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/Comments%20on%20NOPR%20-%20Transmission%20Planning.pdf>; NOPR re Improvements to Generator Interconnection Procedure and Agreements (“Generator

Interconnection NOPR”), RM22-14, available at [https://elibrary.ferc.gov/eLibrary/filelist?accession\\_number=20220616-3082](https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20220616-3082); ERO-E

comments and reply comments on Generator Interconnection NOPR, RM22-14, available at

<https://www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/Interconnection%20NOPR%20Comments%20RM22-14.pdf>

and

[https://www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/Reply%20Comments\\_Interconnection%20NOPR%20RM22-14.pdf](https://www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/Reply%20Comments_Interconnection%20NOPR%20RM22-14.pdf); Order on registration of inverter-based resources, RD22-4, available at

[https://elibrary.ferc.gov/eLibrary/filelist?accession\\_number=20221117-3113](https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20221117-3113); NOPR on Reliability Standards to address inverter-based

resources, RM22-12, available at [https://elibrary.ferc.gov/eLibrary/filelist?accession\\_number=20221117-3114](https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20221117-3114).

<sup>26</sup> NOI re the Implementation of Dynamic Line Ratings, AD22-5, available at

[https://elibrary.ferc.gov/eLibrary/filelist?accession\\_number=20220217-3067](https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20220217-3067) and ERO-E comments on NOI re Implementation of Dynamic

Line Ratings, AD22-5, available at

<https://www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/Cmts%20on%20DLR%20NOI.pdf>



On April 1, 2023, EOP-011-2, IRO-010-4, and TOP-003-5 will become effective and enforceable. These Reliability Standards were updated in response to the *2019 FERC and NERC Staff Report on The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018* (2019 Cold Weather Report)<sup>27</sup>, which recommended modifying the Reliability Standards in several ways to ensure Generator Owners/Generator Operators, Reliability Coordinators and Balancing Authorities prepare for cold weather conditions.

On July 1, 2023, TPL-001-5.1 will become effective and enforceable. This Reliability Standard was updated to address FERC concerns regarding single points of failure (Order 754<sup>28</sup>) and maintenance outages (Order 786<sup>29</sup>).

---

<sup>27</sup> *2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018*, available at [https://www.nerc.com/pa/rrm/ea/Documents/South\\_Central\\_Cold\\_Weather\\_Event\\_FERC-NEC-Report\\_20190718.pdf](https://www.nerc.com/pa/rrm/ea/Documents/South_Central_Cold_Weather_Event_FERC-NEC-Report_20190718.pdf).

<sup>28</sup> Interpretation of Transmission Planning Reliability Standard, Order No. 754, 136 FERC ¶ 61,186 (2011), available at [https://elibrary.ferc.gov/eLibrary/filelist?accession\\_number=20110915-3057](https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20110915-3057).

<sup>29</sup> Transmission Planning Reliability Standards, Order 786, 145 FERC ¶ 61,051 (2013), available at [https://elibrary.ferc.gov/eLibrary/filelist?accession\\_number=20131017-3027](https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20131017-3027).

## Chapter 5: CMEP and ORCP Priorities for 2023

---

### Priorities for 2023

To guide enforcement, compliance monitoring, and registration activities in 2023, NERC has identified the following priorities:

- Continue with prioritization and delivery of enhancements to the Align tool;
- Ensure appropriate registration of various resources;
- Continue to focus on efficient resolution of noncompliance;
- Continue to provide training to Regional Entity CMEP staff to enhance the ERO Enterprise work products and review how the ERO Enterprise tools are being used;
- Support development and sustainability of risk-based Facility Rating programs and resolution of Facility Ratings noncompliance;
- Continue to focus on program alignment, including consistency efforts on penalties, mitigation, training exercises, technical training, documentation, and risk assessments;
- Track completion of COP and IRA development and continue rollout of enhanced COPs for engagements in 2023; and
- Continue to focus on how registered entities have mitigated reliability and security risks while achieving compliance with the Reliability Standards, including intentional focus on internal controls.