



Organization Registration and Certification Program and Compliance Monitoring and Enforcement Program Semiannual Report

June 30, 2024

This report is prepared for the Midwest Reliability Organization (MRO) Board of Directors and stakeholders twice annually to provide a summary of areas addressing key issues, trends, and significant events in the MRO region related to the delegated authorities set forth in the Organization Registration and Certification Program (ORCP) and Compliance Monitoring and Enforcement Program (CMEP).

Key Challenges in Registration, Certification, Compliance, Risk Assessment and Mitigation, and Enforcement

Organization Registration and Certification

Certification Program Activity Completions

Entities that are registered as a Balancing Authority (BA), Reliability Coordinator (RC), or Transmission Operator (TOP) generally have a greater impact on the reliable operation of the bulk power system (BPS) based on real time actions that affect the grid. A registration candidate is required to complete the certification process for BA, RC, or TOP registered function. The certification process involves demonstrating the ability to meet the requirements of all Reliability Standards applicable to the functions for which the entity is applying for through tools, processes, training and procedures. If an entity is currently registered as a BA, RC, or TOP and experiences a notable change in registration criteria, such as a control center relocation or a modification of an Energy Management System (EMS), then the entity is required to initiate a certification review. Certification reviews assess the processes, procedures, tools and training the entity intends to use in performing the functions of a BA, RC, or TOP. Entity certifications apply to new registered entities or existing registered entities in one or more of the three aforementioned functions.

MRO plans to conduct eleven certification activities in 2024, which is the largest number of activities scheduled in a one-year period over the past five years. This includes both relocation of control centers, and Energy Management System (EMS) modifications. Two were completed during the first half of the year and nine remain in process. The affected region(s) and NERC collaboratively decided what method of activity for each entity organization was required. The certification reviews will be provided by MRO or supported by MRO as an Affected Regional Entity for those entities registered in multiple regions. The reviews were initiated because of material registration changes related to control center relocations and/or Emergency Management System (EMS) modifications.



Functional Registration Changes

From January 1 through June 30, 2024, MRO processed 18 registration requests on its NERC Compliance Registry (NCR). Eight of the requests added entity functions to the registry while ten entity functions were deactivated (Fig. 1). The number of entities on MRO’s registry fluctuates due to first-time registration requests and functional registration change requests. As of June 30, 2024, MRO has 250 registered entities. Active entity functions on the registry have increased by 1% each year since 2022. MRO concentrated on registration activity in the first half of the year related to the Generator Owner (GO) and Generator Operator (GOP) functions (Fig. 2).

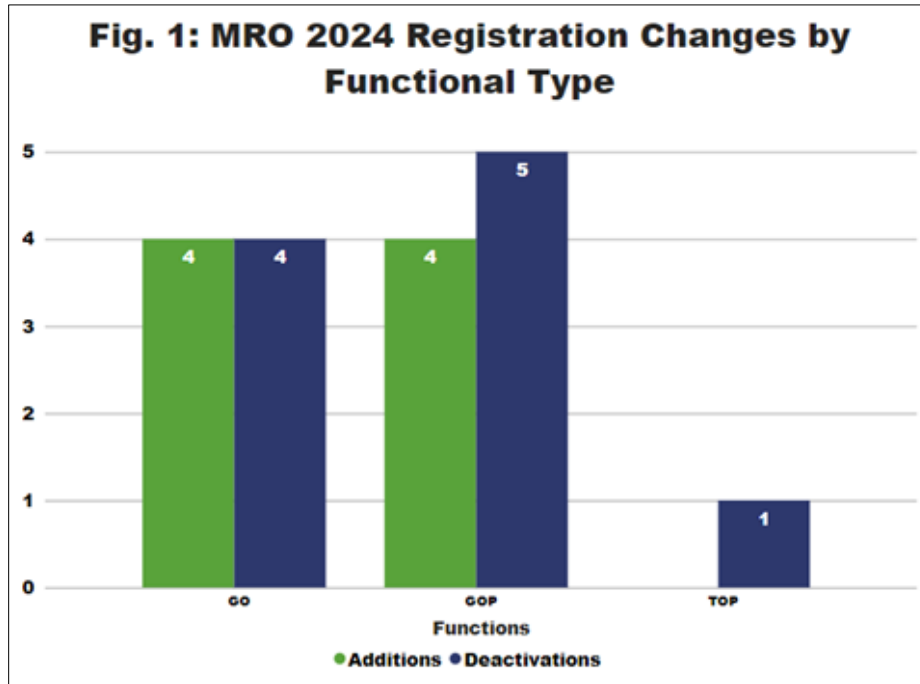


Fig. 2: Definitions for Functions that have changes for MRO

Function	Function Acronym	Definition*
Generator Owner	GO	The entity that: 1) owns and maintains generating Facility(ies) (Category 1 GO); or 2) owns and maintains non-BES inverter based generating resources that either have or contribute to an aggregate nameplate capacity of greater than or equal to 20 MVA, connected through a system designed primarily for delivering such capacity to a common point of connection at a voltage greater than or equal to 60 kV (Category 2 GO).
Generator Operator	GOP	The entity that: 1) operates generating Facility(ies) and performs the functions of supplying energy and Interconnected Operations Services (Category 1 GOP); or 2) operates non-BES inverter based generating resources that either have or contribute to an aggregate nameplate capacity of greater than or equal to 20 MVA, connected through a system designed primarily for delivering such capacity to a common point of connection at a voltage greater than or equal to 60 kV (Category 2 GOP).
Transmission Operator	TOP	The entity responsible for the reliability of its local transmission system and operates or directs the operations of the transmission Facilities.

*More definitions can be found at: [Appendix 5B Statement of Compliance Registry Criteria](#)



Registration of Inverter-Based Resources

The ERO Enterprise Inverter-Based Resource (IBR) Registration Initiative has been underway for 12 months. The purpose of this initiative is to close an identified reliability gap with IBRs connected to the bulk power system (BPS) that have a material impact on the BPS but fall under the threshold of registration and therefore are not registered or subject to NERC Reliability Standards.

NERC established new NERC registration criteria to register owners and operators of BPS-connected IBRs with a nameplate capacity greater than or equal to 20MVA and interconnected at 60kV or greater. This change is intended to address a reliability gap associated with the increasing integration of IBRs specifically non-BES IBRs. NERC has scheduled the registration of these IBR candidates to begin in May 2025 per the NERC Inverter Based Resources Work Plan and IBR Registration milestones. NERC's analysis of the 2022 U.S. Energy Information Administration (EIA) data identified over 80 BPS-connected IBR assets in the MRO region that meet the proposed criteria. To date, the ERO has not analyzed the 2023 data. More information on this initiative can be found on the NERC website at: [IBR Registration initiative](#).

Section 800 Data Request Regarding Cross-Border Operation of BPS Elements

In Q4 2023, ERO Enterprise developed and NERC issued a Section 800 data request to registered GOs, GOPs, Transmission Owners (TOs), and TOPs to better understand the extent to which non-U.S. entities operate or control U.S. BPS assets.

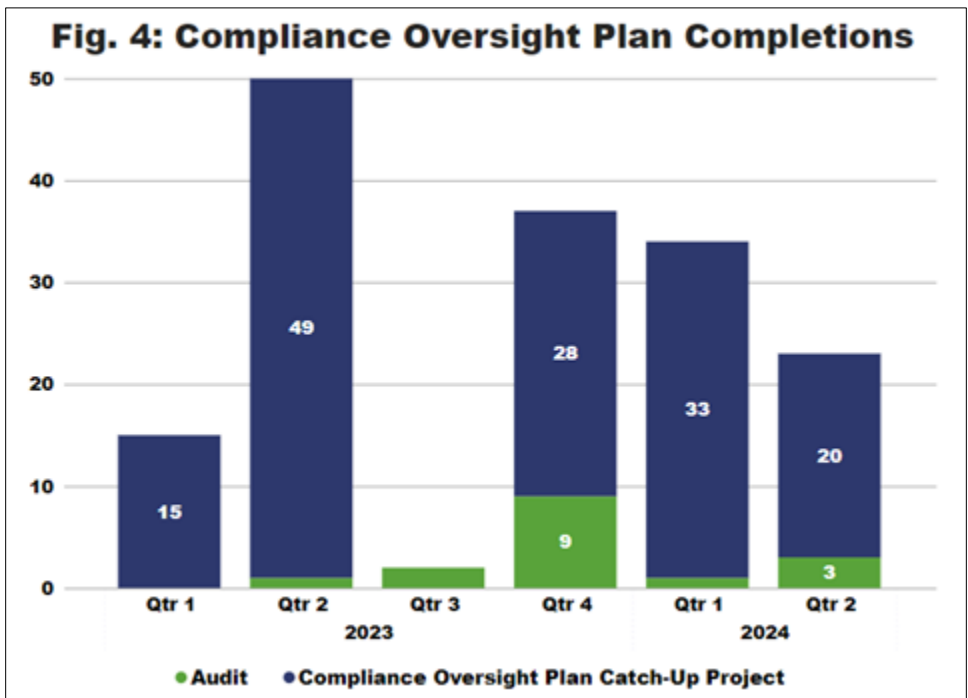
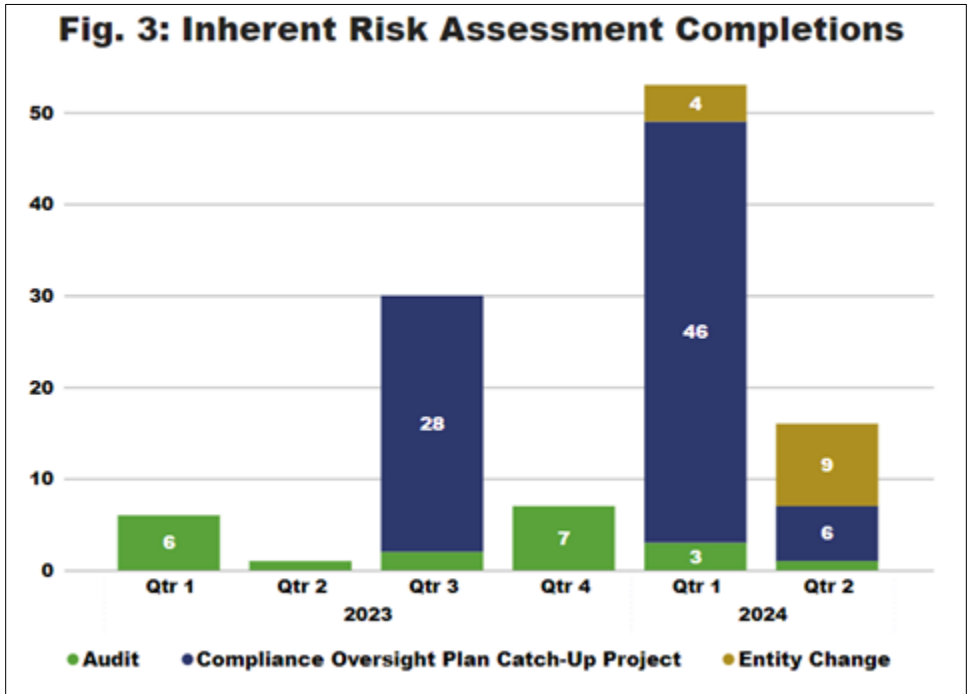
The industry responses were due Q1 2024. In Q3 2024, the ERO Enterprise is scheduled to complete the data analysis assessing the extent of risk and evaluation of next steps, which may impact potential ORCP and CMEP activities.

Compliance Monitoring

Inherent Risk Assessments (IRA) and Compliance Oversight Plans

The Inherent Risk Assessment (IRA) identifies potential risks an entity poses to reliability of the BPS based on the facilities they own and operate. The IRA process uses ERO-wide risk factors and associated criteria to identify risk areas and applicable NERC Reliability Standards and Requirements. Development of the Compliance Oversight Plan for a specific entity begins with this IRA and adds a detailed review of the entity's registration, compliance history, system performance, event history, and other performance considerations, resulting in identification of the risk categories that will be the focus for the entity's future compliance monitoring activities. This plan also identifies the appropriate interval for monitoring and the types of tools that will be used.

In 2023, the ERO started a special project to create IRAs for entities where an IRA had not been previously completed using the ERO risk factors. In 2024, the ERO Enterprise standardized the conditions that trigger the creation or update of IRAs and/or Compliance Oversight Plans for a registered entity. These triggers include audits and changes to an entity's registration, coordinated oversight status, and certain other aspects of inherent risk. Figures 3 and 4 below provide the numbers of IRAs and Compliance Oversight Plans that were completed in each quarter in 2023 and 2024, to date. The quarterly completion numbers reflect an aggressive effort (Compliance Oversight Plan Catch-Up Project) which addressed the backlog in completing IRA/COPs. MRO is now current with NERC expectations on IRA/COP completions.





Compliance Audits and Spot Checks

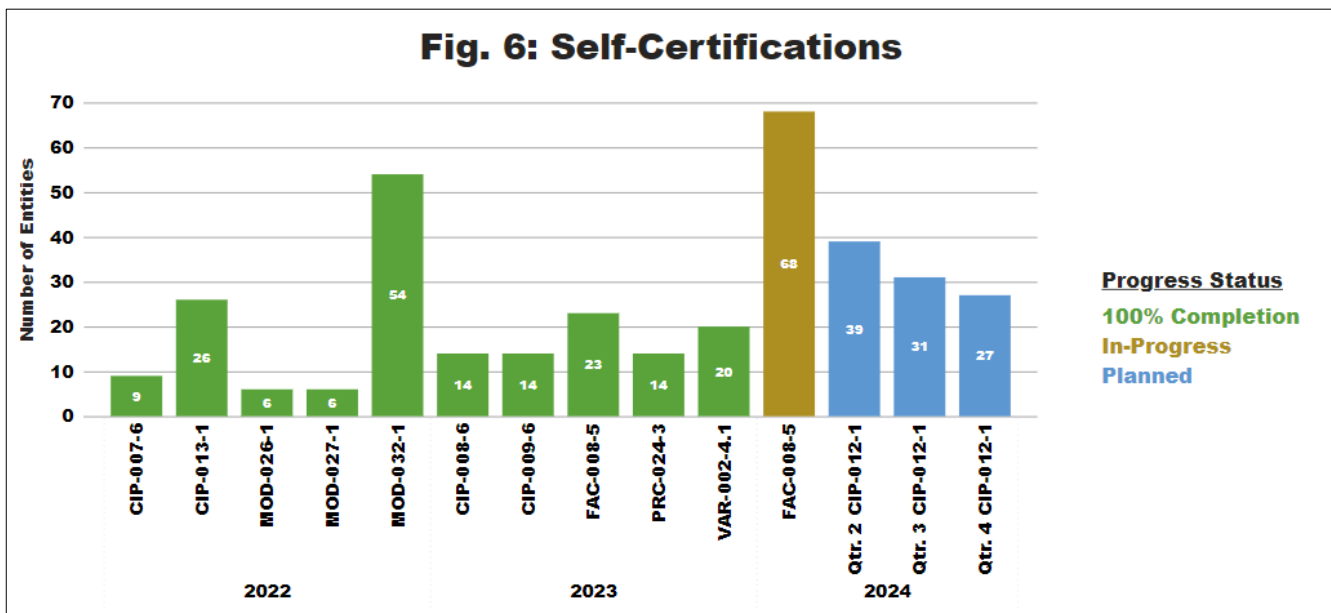
MRO completes periodic audits to assess registered entities' compliance with the NERC Reliability Standards as identified in the entity's compliance oversight plan. A portion of the MRO audits are performed under the ERO Coordinated Oversight Program, which is a joint engagement with other regions for multi-regional registered entities that have been approved to participate in this program. The figure below (Fig. 5) details the MRO audit schedule for proposed audits in 2024 as well as audits completed in 2022 and 2023 as lead Region.

Fig. 5: Compliance Audits and Spot Checks							
Year	CIP Only	O&P Only	Combined (CIP and O&P)	Spot Check	Total	Coordinated Oversight (MRO Led)	Onsite Audits
2022	1	0	13	1	15	8	13
2023	1	2	11	0	14	4	8
2024	1	4	8	4	17	3	9

Additionally, MRO participated in five Coordinated Oversight audits as [Affected Regional Entity](#) (ARE).

Self-Certifications

MRO utilizes the guided Self-Certification process as a [fundamental](#) tool to monitor risks identified in the [MRO Regional Risk Assessment](#) and the ERO Enterprise [CMEP Implementation Plan](#) that impact a limited number of requirements. For Self-Certifications, MRO provides detailed instructions to a group of entities to validate and provide compliance assurance. MRO subsequently reviews and verifies the entities' conclusions. Fig. 6 details the MRO Self-Certification schedule and status of completion for 2022 through 2024.

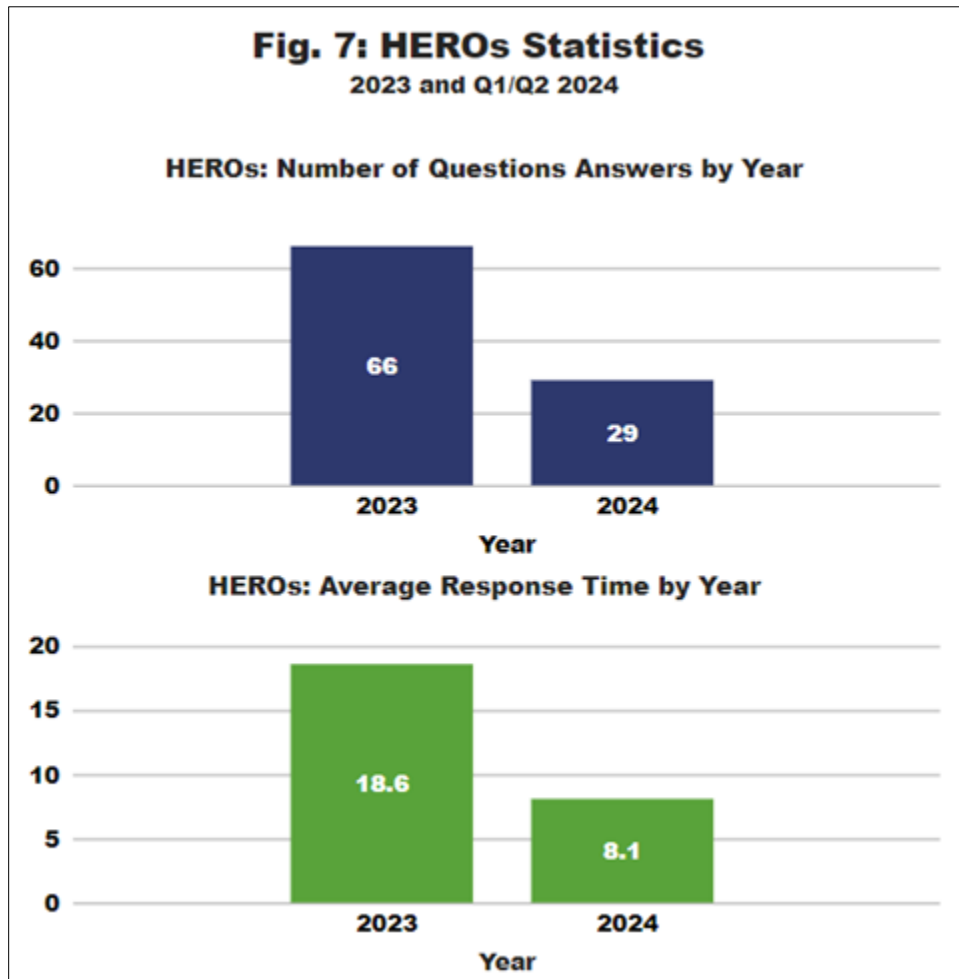




Risk Assessment and Mitigation

Highly Effective Reliability Organizations® (HEROs) Update

MRO's Risk Assessment and Mitigation (RAM) Department continues to monitor and respond to questions submitted to Heros@mro.net. MRO registered entities use this tool as a mechanism for submitting compliance related questions to staff. In 2023, MRO received 66 questions and to date in 2024, MRO has received 27 questions (Fig. 6). The goal is for staff to respond within 30 days. However, MRO has consistently provided answers well below the 30-day goal (Fig. 7).

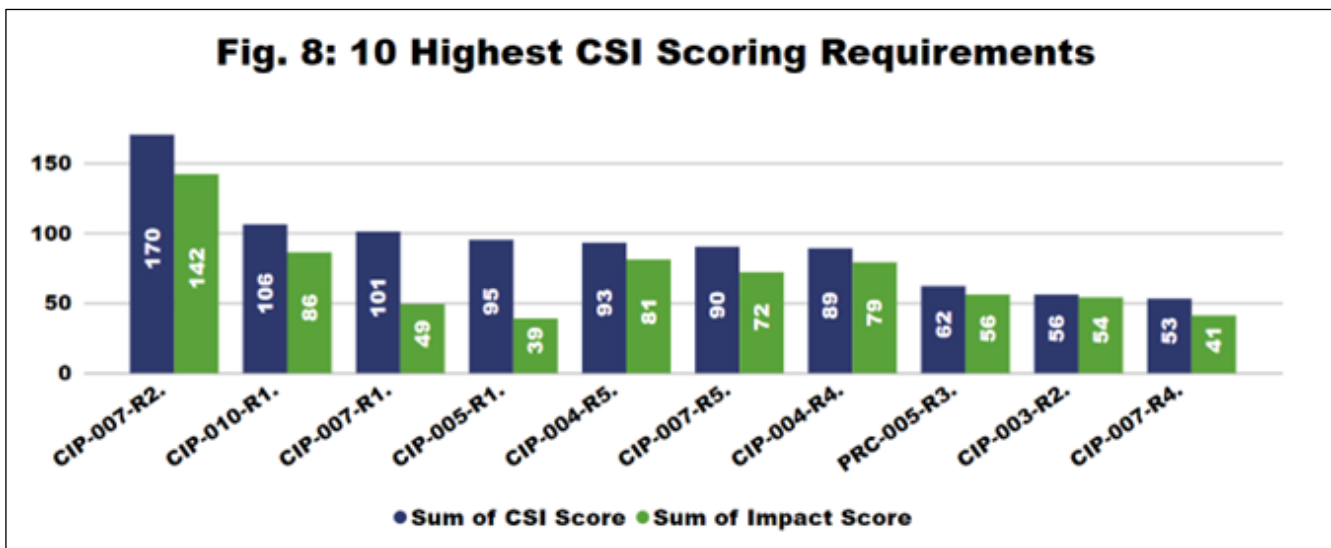




Risk Assessment and Mitigation Trends

Compliance Severity Index

MRO staff use the Compliance Severity Index (CSI) (Fig. 8) to evaluate progress toward a key reliability goal of less severe violations. CSI represents the total risk that instances of noncompliance present to the reliability or security of the BPS in the MRO region. MRO calculates the CSI using the risk determination and Discovery Method for each issue of noncompliance. MRO examines the CSI by aggregating it at the NERC Standard Requirement level. To help reveal the areas where instances of noncompliance are discovered relatively more frequently by audit than by entity internal programs, CSI scores are compared to original risk determinations (Impact Scores). The greater the difference between CSI and Impact scores, the greater degree to which noncompliance of the scored Requirement is being discovered by MRO audit activities. MRO has seen a notable decrease in the risk of issues of noncompliance over the past decade due to an overall improvement in the culture of compliance. Registered entities are self-identifying issues of noncompliance in a timely manner prior to issues presenting a greater risk to reliability. Fig. 8 represents information from January 1, 2020, to June 30, 2024.



Description of the Top Five Highest Risk Requirements based on CSI (Fig. 8)

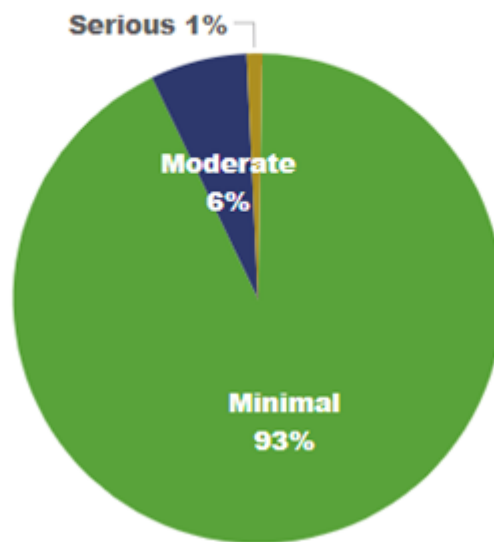
- CIP-007 R2: Implement a security patch management process for tracking, evaluating, and installing cyber security patches for applicable Cyber Assets.
- CIP-010 R1: Develop baseline configurations for applicable Cyber Assets.
- CIP-007 R1: Minimize the attack surface of BES Cyber Systems through disabling or limiting access to unnecessary network accessible logical ports and services and physical I/O ports.
- CIP-005 R1: Manage electronic access to BES Cyber Systems by specifying a controlled Electronic Security Perimeter in support of protecting BES Cyber Systems against compromise.
- CIP-004 R5: Implement programs which revoke an individual’s authorized physical and electronic access to applicable BES Cyber Systems upon termination, reassignment, or transfer actions.



Risk Determinations for Issues of Noncompliance

All cases of noncompliance are reviewed by MRO and, for each case, a determination is made of the level of risk to the bulk power system (BPS) represented by the noncompliance. The three risk levels that may be assigned to a case are minimal, moderate, and serious. MRO monitors, in aggregate, the risk determinations assigned over time to observe the region's overall effectiveness in its objective to minimize risk to the BPS. Higher percentages of cases determined to be minimal risk are an indicator of positive performance toward that objective. Ninety-three percent of all instances of noncompliance from January 1, 2020, to June 30, 2024, were determined to be minimal risk (Fig. 9).

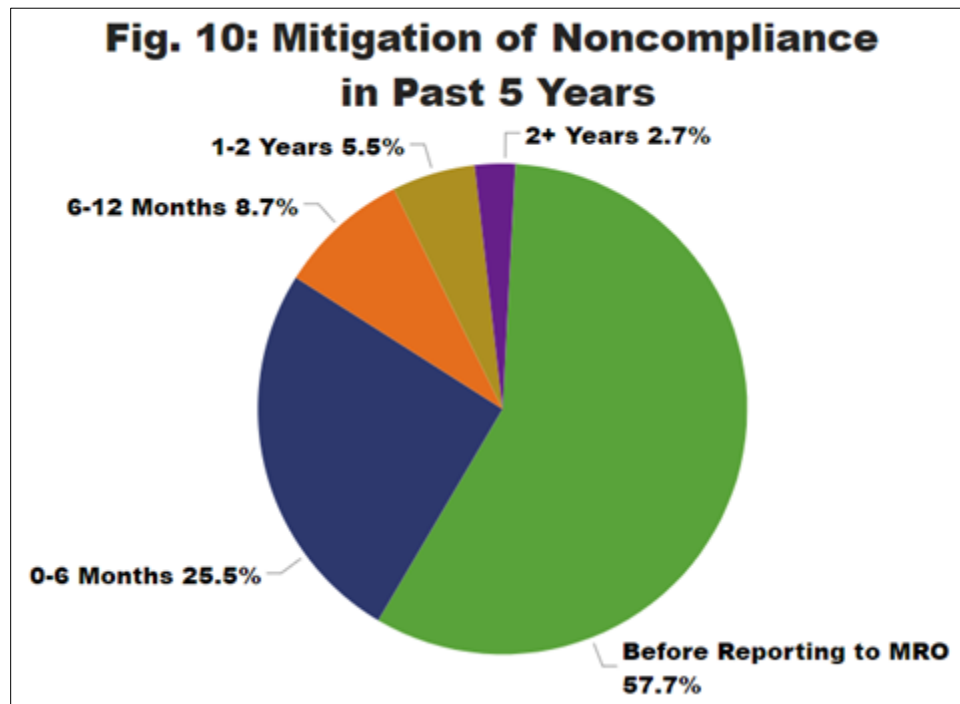
Fig. 9: Risk Determinations for Instances of Noncompliance





Mitigation of Noncompliance

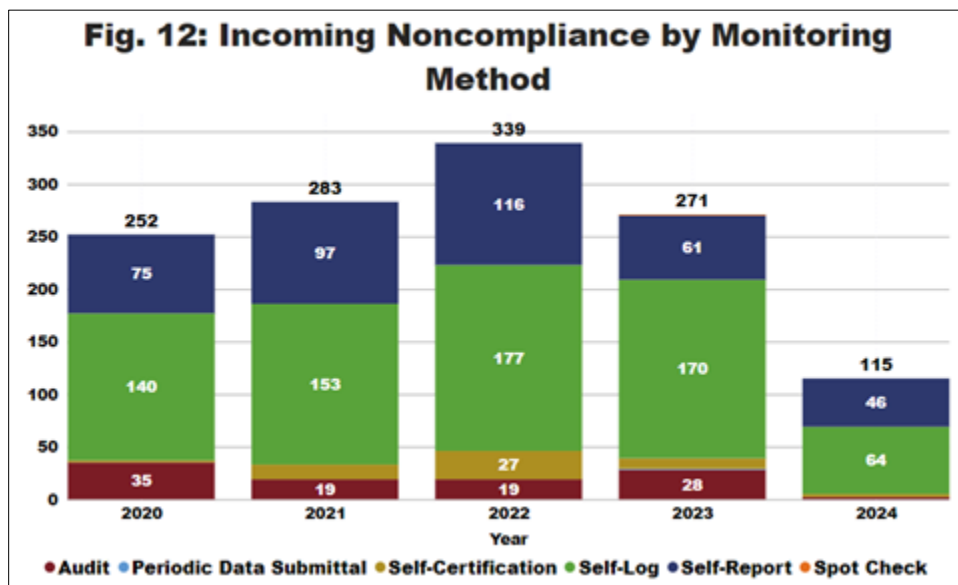
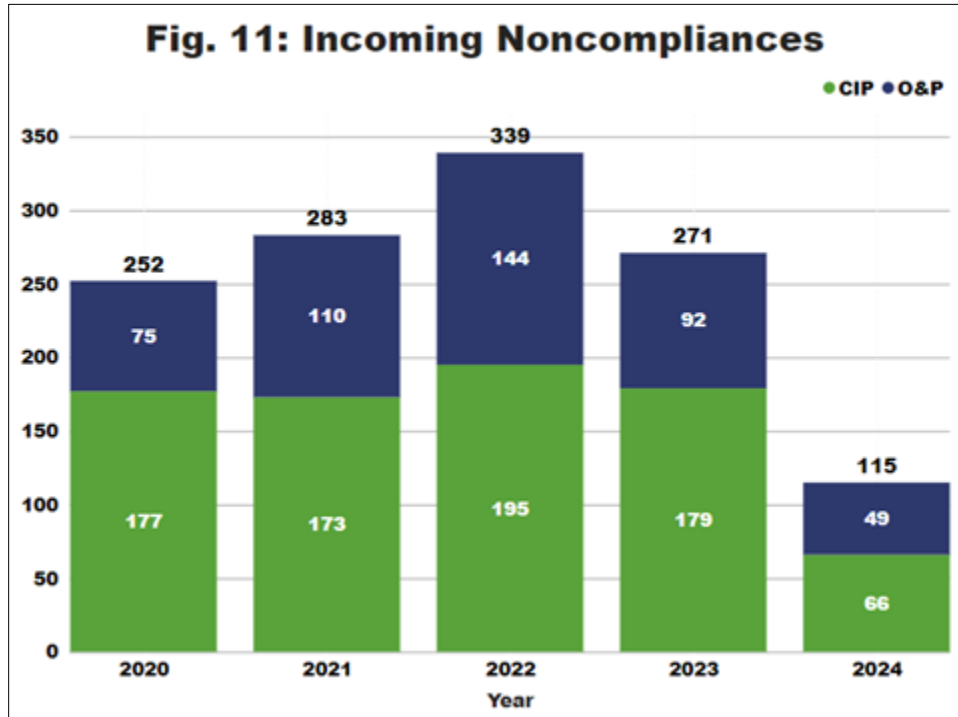
Mitigation of noncompliance involves both the correction of the immediate issue that led to the noncompliance as well as steps to minimize future recurrence. Entities that have open issues of noncompliance with ongoing mitigation have measures in place to reduce risk to the BPS while working to remediate the issue and implement controls to minimize future recurrence. Fig. 10 illustrates the historical pattern of the timing of mitigation relative to the reporting of noncompliance in the MRO region for January 1, 2020, to June 30, 2024. In more than half of all cases, entities have mitigated noncompliance before reporting to MRO. For the cases where the entity completes mitigation after reporting to MRO, over half of those are mitigated within six months of reporting. Overall, 92% of all cases of noncompliance are mitigated by the entity within one year of reporting. MRO Risk Assessment and Mitigation staff closely monitor cases requiring more than a year to mitigate





Noncompliance Trends and Statistics

Fig. 11 shows the breakdown of Critical Infrastructure Protection (CIP) vs Operations & Planning (O&P) possible issues of noncompliance as reported to Regulatory Authority, whereas Fig. 12 shows how each issue of noncompliance (monitoring method) was reported to the Regulatory Authority¹.



¹ Regulatory Authority includes NERC, FERC, and Canadian provincial governments.



Discovery Method Detail (January 1, 2020, through June 30, 2024)

In Fig. 13, the percentages reflect the discovery method for all noncompliances that MRO reported to a Regulatory Authority (NERC or Canadian regulator). MRO continues to see most issues of noncompliance are self-identified (Self-Report or Self-Log) by registered entities. MRO staff analyzes how often registered entities self-identify and accept responsibility for noncompliance. These trends are indicators of the commitment among registered entities in the region to perform self-assessments of their compliance with the reliability standards. This demonstrates a strong governance and compliance culture of registered entities in the MRO region, as well as registered entities' willingness to accept, and learn from, discovered issues of noncompliance to prevent future noncompliance with Reliability Standards.

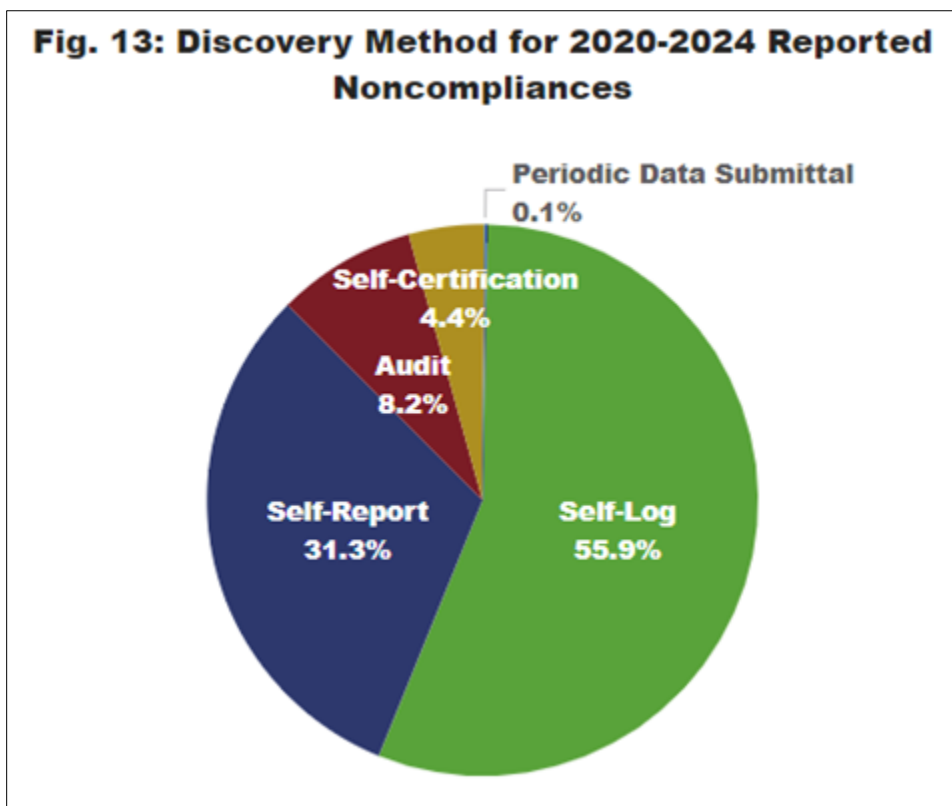
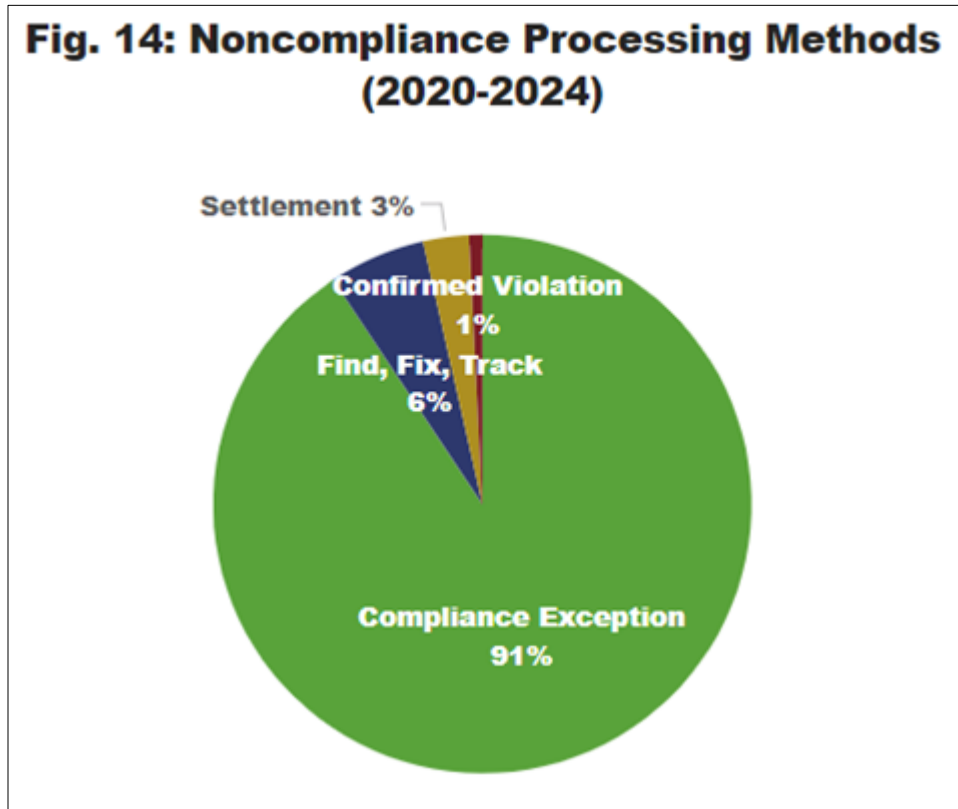




Fig. 14 shows how MRO disposed of the issues of noncompliance reported to MRO and reported to the Regulatory Authority. MRO staff analyzes trends in the status of noncompliance processing by compiling all available processing methods, the average age of open noncompliances, and the closure percentage of noncompliances for each year. MRO continues to see progress towards expedited processing due to the increased use of minimal risk noncompliance disposition methods.





Noncompliance Processing Comparisons

As shown in Fig. 15, MRO continues to focus on eliminating the backlog of noncompliance. During the first half of 2024, MRO reduced its 2023 and older inventory of noncompliance by 37.5%. The entire ERO Enterprise reduced its 2023 and older inventory of noncompliance by nearly 22% for the same time period. MRO continues to focus on reducing the older inventory as reflected in Fig. 15

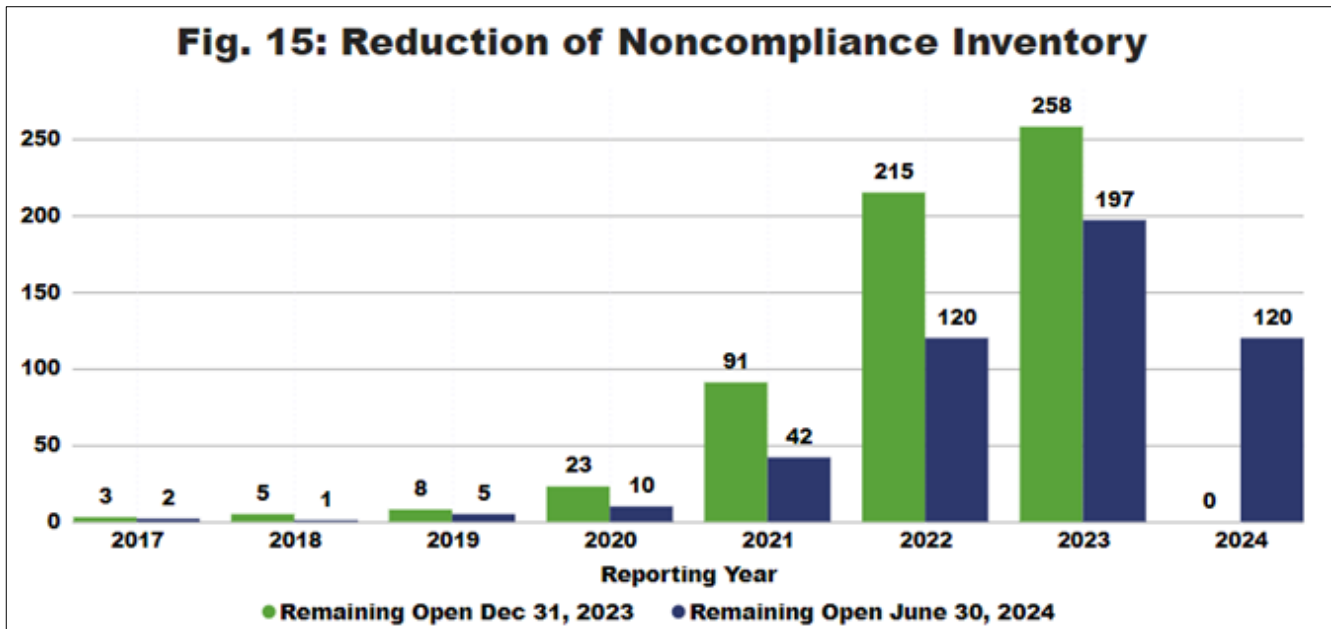
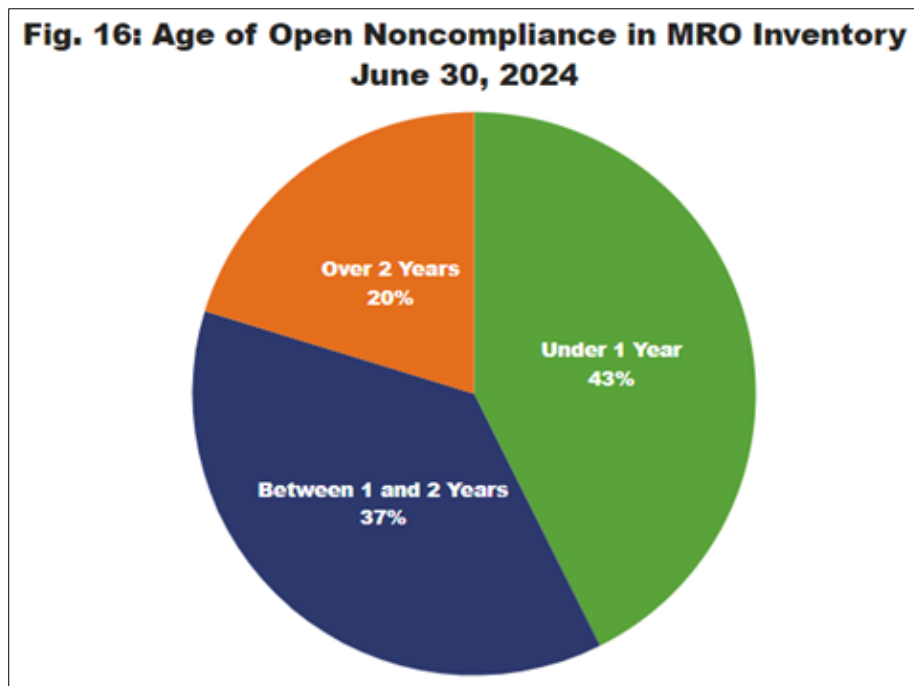


Fig. 16 illustrates the aging time for all open instances of noncompliance reported to MRO and applicable regulatory authority as June 30, 2024.





For Additional Information, see [MRO's Operational Activities Report](#) (pages 24 and 25).

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