NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Compliance Monitoring and Enforcement Program Annual Report

February 5, 2020

RELIABILITY | RESILIENCE | SECURITY




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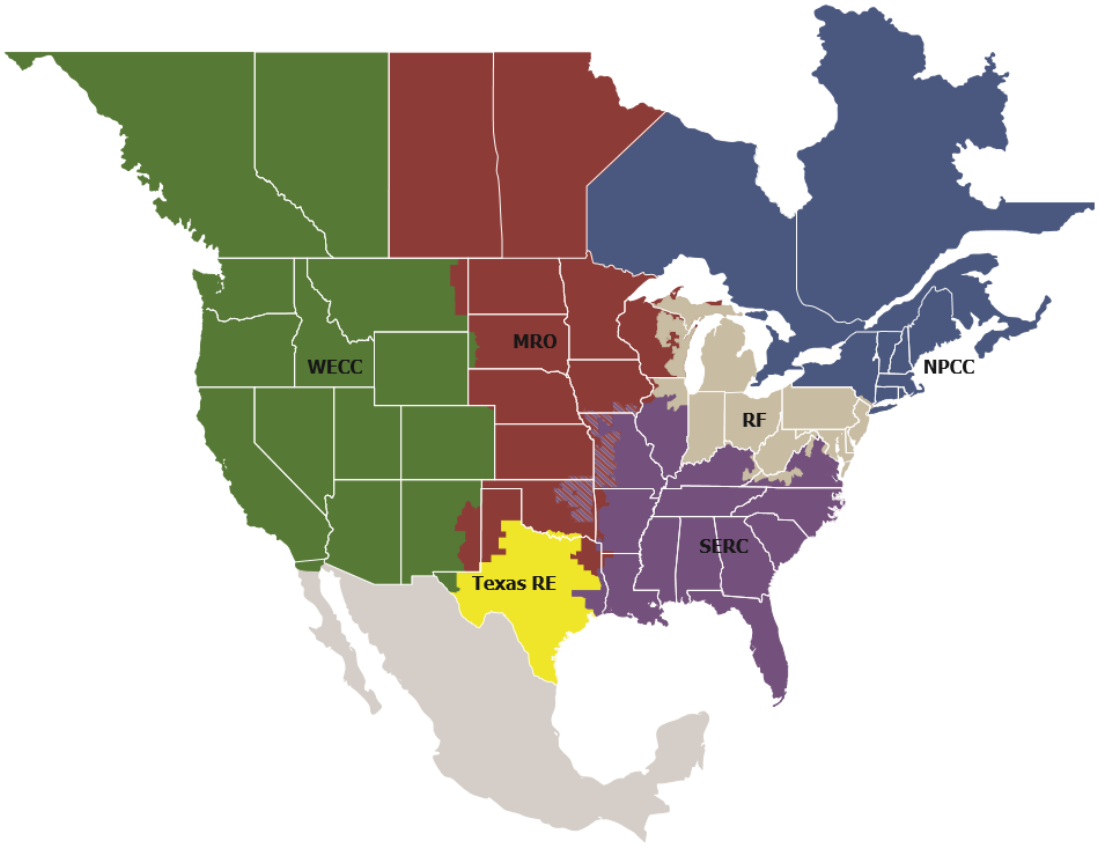
Preface

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 (REs), 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 divided into six RE boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one RE while associated Transmission Owners and Operators participate in another.



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

Executive Summary

This report highlights key ERO Enterprise[1] Compliance Monitoring and Enforcement Program (CMEP) activities that occurred in 2019, provides information and statistics regarding those activities, and identifies the ERO Enterprise's 2020 CMEP priorities.

In 2019, CMEP 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, risks specific to registered entities, and risks pertaining to serious noncompliance. In 2019, the ERO Enterprise:

- Promoted a focus on internal controls in all CMEP activities, ranging from compliance monitoring to mitigation of noncompliance;
- Placed significant emphasis on outreach to industry on 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, Facility Ratings, and vegetation management;
- Assured continuity of the Reliability Coordinator (RC) function as Peak Reliability (Peak) ceased its RC services by certifying and registering three new RCs for the Western Interconnection;
- Successfully completed the transition of registered entities within the Florida Reliability Coordinating Council Regional Entity (FRCC RE) footprint to SERC following the dissolution of FRCC RE;
- Began implementation of a revised Compliance Oversight Plan (COP) process;
- Rolled out the Centralized Organization Registration ERO System (CORES) project and made progress on the CMEP Technology Program (otherwise known as Align);
- Endorsed Implementation Guidance and CMEP Practice Guides in areas addressing inverter-based resources, supply chain management, BES Cyber System Information (BCSI), and generator frequency and voltage protective relay settings; and
- Continued to work on aligning programs across the ERO Enterprise to create greater consistency in its approach to CMEP activities.

In 2020, the ERO Enterprise plans to continue its focus on effective program alignment and harmonization in risk-based compliance monitoring and enforcement. Specific priorities for 2020 include completing and delivering Release 1 of the new CMEP Technology Tool, Align, continuing to embed internal control activities within the compliance monitoring program, working as an ERO Enterprise with stakeholder feedback to evaluate compliance monitoring and enforcement processes for efficiency, and harmonizing processes where appropriate.

[1] The "ERO Enterprise" refers to the affiliation between NERC and the six REs 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. ERO Enterprise activities outside of the United States are not specifically addressed.

Chapter 1: CMEP Activities

In 2019, the ERO Enterprise continued to work towards aligning CMEP activities across the ERO Enterprise and identifying and addressing risks to the reliability of the BPS. Highlights include rolling out the CORES project, reaching major milestones in Align, and conducting ERO Enterprise staff training and outreach. Additionally, the ERO Enterprise completed the transition of entities formerly registered in the FRCC RE footprint following approval by the Federal Energy Regulatory Commission (FERC).

CMEP Implementation Plan

In 2019, NERC posted the *2020 ERO Enterprise CMEP Implementation Plan.*[2] The CMEP Implementation Plan (CMEP IP) is enhanced and easier to use due to focusing on risk elements. NERC identified the risk elements listed below using the risk element development process.[3] 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,[4] the State of Reliability Report,[5] the Long-Term Reliability Assessment,[6] other publications from the RISC, special assessments, and ERO Event Analysis insights.

The following are the risk elements in 2020:

- Management of access and access controls,
- Insufficient long-term and operations planning due to inadequate models,
- Loss of major transmission equipment with extended lead times,
- Inadequate real-time analysis during tool and data outages,
- Improper determination of misoperations,
- Gaps in program execution, and
- Resource adequacy in the ERCOT Interconnection.

The 2020 risk elements reflect a continued maturation of the risk-based approach to compliance monitoring. The risk elements are largely unchanged from 2019 and continue to be more focused on discrete issues that the ERO Enterprise plans to prioritize in the coming year, in part through CMEP activities. Previous risk elements were generally broader, and the ERO Enterprise intends that the 2020 risk elements will provide better guidance to industry and REs 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. In a change from prior years, the ERO Enterprise has stopped including RE-specific Implementation Plans as appendices to the ERO Enterprise CMEP IP.

The REs evaluate the relevance of the 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

[2] 2020 ERO Enterprise CMEP IP, Version 2.0 (November 2019), available at https://www.nerc.com/pa/comp/CAOneStopShop/2020_ERO_CMEP_Implementation%20Plan.pdf

[3] Appendix C, ERO Enterprise Guide for Compliance Monitoring (October 2016), available at http://www.nerc.com/pa/comp/Reliability%20Assurance%20Initiative/ERO%20Enterprise%20Guide%20for%20Compliance%20Monitoring.pdf

[4] 2019 ERO Reliability Risk Priorities Report (November 2019), available at https://www.nerc.com/comm/RISC/Related%20Files%20DL/RISC%20ERO%20Priorities%20Report_Board_Accpeted_November_5_2019.pdf

[5] State of Reliability 2018, available at https://www.nerc.com/pa/RAPA/PA/Performance%20Analysis%20DL/NERC_2018_SOR_06202018_Final.pdf; 2019 State of Reliability, available at https://www.nerc.com/pa/RAPA/PA/Performance%20Analysis%20DL/NERC_SOR_2019.pdf.

[6] 2018 Long-Term Reliability Assessment (December 2018), available at https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_LTRA_2018_12202018.pdf

be more relevant to assist mitigating the risk, or the risk may not apply to the entity at all. Focus will be tailored as needed depending on regional distinctions or registered entity differences. NERC will include a focus area in its 2020 oversight activities to review how REs use risk elements and their associated areas of focus to inform their compliance monitoring activities.

Internal Controls Evaluations

As risk-based compliance monitoring continues to evolve, the goals for internal controls remain unchanged. Specifically, internal controls remain an integral component to shaping oversight that is tailored to an individual registered entity. The importance of internal controls to the successful implementation of risk-based compliance monitoring and enforcement has resulted in the ERO Enterprise placing more emphasis on understanding internal controls during all aspects of the CMEP. As the ERO Enterprise's understanding of an entity's internal controls develops, the entity's CMEP experiences should reflect that understanding, resulting in noticeable differences in monitoring and enforcement activities for entities that have made investments in strong internal controls.

Compliance Oversight Plans

The ERO Enterprise uses COPs to convey the compliance monitoring oversight strategy for each registered entity. Each entity's COP tailors compliance monitoring activities based on entity-specific factors such as compliance history and events, with an emphasis on understanding an entity's internal controls and other performance factors. The ERO Enterprise uses COPs to provide comparative assessments and thereby shape oversight planning and resource allocation of ERO Enterprise staff.

Throughout 2018 and 2019, the ERO Enterprise focused on harmonizing and enhancing the COP process. Strategic improvements include the development of the following:

- Six oversight strategies that convey the frequency of monitoring activities and type of compliance monitoring tool to be used;
- Thirteen risk categories that convey entity-specific risks intended to provide areas for continuous improvement as well as focus for ERO Enterprise staff in scoping its compliance monitoring activities; and
- A common report template that combines the Inherent Risk Assessment (IRA) and COP summary.

REs will continue to transition and implement the revised COP process throughout 2020. Specifically, REs will begin to use the new COP report template to prepare and plan future compliance monitoring engagements and emphasize the new COP approach during their 2020 outreach.

ERO Enterprise Staff Training and Industry Outreach

NERC CMEP 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 REs. 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, RE 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.

ERO Enterprise CMEP Staff Training

In accordance with Rules of Procedure (ROP) Section 402 and Appendix 4C, NERC staff conducted audit team-lead and certification team-lead training at the MRO office in Minneapolis in April 2019 and at the NERC office in Atlanta in October 2019. These training sessions were attended by 35 RE CMEP personnel. Under the *Requirements for Compliance Audit and Certification Team Lead Members* in the ROP, RE staff must successfully complete the audit team-lead and certification team-lead training. Additionally, NERC conducted a Crucial Conversations course in

conjunction with the October 2019 audit team-lead and certification team-lead training; this training was attended by 11 RE CMEP personnel.

In April 2019, the ERO Enterprise conducted its annual ERO Enterprise CMEP Staff Workshop. This was a four-day workshop attended by approximately 150 CMEP staff. The first day included general sessions focusing on COPs and data analytics. The second and third day included further detail for tools and techniques applied to compliance monitoring and enforcement of operations and planning (non-CIP) and critical infrastructure protection (CIP) standards.

In December 2019, the Enforcement Group (EG) held two days of meetings at NERC's office in Atlanta that included alignment activities for risk assessment and the evaluation of compliance history.

The 2020 Annual ERO Enterprise CMEP Staff Workshop will be held in Atlanta in April 2020. The workshop will include continued focused technical training on Reliability Standards along with internal controls, development of documentation, COP development, annual planning, and alignment of concepts.

Industry Outreach via Webinars and Workshops

In 2019, the ERO Enterprise provided numerous outreach opportunities to industry stakeholders through workshops, monthly newsletters, assist visit programs, webinars, and other events. These outreach events focused on a variety of topics, including – but not limited to – the following:

- Common themes seen in serious risk CIP violations,
- The importance of internal controls,
- New or revised Reliability Standards that will be enforceable in the near future, and
- Shared trends and best practices involving currently enforceable Reliability Standards that have traditionally posed a higher risk to the reliability and security of the BPS.

In April 2019, the ERO Enterprise delivered a Violation Themes Webinar regarding serious risk CIP violations.[7] The webinar covered the underlying causes of significant CIP violations. The ERO Enterprise also emphasized the comprehensive resolutions of such violations, including robust mitigation, engagement between registered entity and RE subject matter experts, financial penalties, and non-monetary sanctions to ensure lasting solutions. The webinar included descriptions of controls that registered entities could implement to reduce the likelihood of experiencing the types of significant failures seen in the CIP Notices of Penalty (NOPs) filed in 2019. Several REs held additional outreach activities later in the year to reinforce the lessons learned conveyed in the April 2019 Violation Themes Webinar.

The ERO Enterprise Compliance and Standards Workshop, held in Minneapolis in July 2019, focused on internal controls. Several registered entities shared examples of their internal controls and compliance programs. ERO Enterprise staff discussed internal controls related to specific Reliability Standards, including FAC-008 and the CIP Standards. The presenters emphasized that internal controls considerations permeate all aspects of the risk-based CMEP, from the development of COPs to risk assessment of noncompliance and through the development of comprehensive mitigation to ensure sustainable solutions to ensure reliability and security. Multiple REs reinforced the importance of internal controls during their 2019 outreach events, noting that internal controls can help ensure reliability and security while also making it easier to demonstrate compliance with the Reliability Standards.

[7] Violations Themes Webinar presentation, available at https://www.nerc.com/pa/comp/CE/Enforcement%20Actions%20DL/Violations%20Themes%20Webinar%20-%20CIP%20Violations.pdf; recording of Violation Themes Webinar, available at https://nerc.webex.com/recordingservice/sites/nerc/recording/3462637a31884e9fbf455671c7288e6c.

Beginning at the Compliance and Standards Workshop, a panel comprised of NERC and RE staff presented on enhancements to the COP process. Similarly composed teams provided this presentation at RE Compliance workshops throughout Q3 and Q4 2019. The teams will continue to support this messaging at outreach activities throughout 2020.

Multiple REs provided outreach regarding new or revised CIP Reliability Standards, such as the new requirements for Low Impact BES Cyber Systems in CIP-003-7 and CIP-003-8 and the new Supply Chain Risk Management Reliability Standard in CIP-013-1 and related updates to CIP-005-6 and CIP-010-3. Several REs provided outreach regarding new non-CIP Reliability Standards becoming effective in 2020, including PER-006-1 and PRC-027-1.

REs 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 around cyber and physical security, Facility Ratings, and vegetation management. Multiple REs also highlighted FERC lessons learned from the FERC-led CIP audits of registered entities.[8]

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.

Small Group Advisory Sessions

In 2019, NERC hosted several small group advisory sessions (SGAS) with registered entities, NERC Compliance Assurance, and REs to discuss the preparation for and implementation of the CIP Supply Chain Standards.[9] The sessions included a combination of technical guidance with a continued emphasis on the major components of the risk-based CMEP.

Each SGAS consisted of closed one-on-one discussions between a registered entity's supply chain security experts and ERO Enterprise staff about concerns pertinent to the entity's implementation of the proposed Supply Chain Standards. Overall, the trainings efficiently paved the way for the entities to comply effectively with the new Standards once they become effective in July 2020.

ERO Enterprise Collaboration with North American Transmission Forum

In 2019, the ERO Enterprise and the North American Transmission Forum (NATF) committed to working together to advance our mutual objectives, leverage each organization's strengths, and minimize duplication of effort. This involves coordinating a range of activities including conducting joint workshops and NATF development of implementation guidance. It also involves deeper collaboration on identified higher tier risks such as Facility Rating inaccuracies and selected supply chain risks for mitigation by registered entities.

Recent years' audit and enforcement activities, including field verifications by the REs and registered entities, have identified multiple instances of discrepancies between documented equipment or Facility Ratings and actual field conditions. In multiple instances, the Facility Ratings have not taken into account the most limiting series element, resulting in overestimation of Facility Ratings in some cases. The discrepancies identified thus far include some significant and widespread discrepancies across the ERO Enterprise. When Facility Ratings are not determined correctly and applied consistently for all applicable facilities, this can result in equipment operated beyond its capability, causing equipment damage or line sagging beyond its design, resulting in unplanned outages and potentially posing significant risk to the BPS.

[8] FERC has issued three lessons learned reports from its CIP Reliability Audits, which are available at 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).

[9] *See* CIP-013-1 (Cyber-Security – Supply Chain Risk Management); CIP-005-6, Requirement R2, Parts 2.4 – 2.5 (Cyber Security – Electronic Security Perimeter(s)); CIP-010-3, Requirement R1, Part 1.6 (Cyber Security – Configuration Change Management and Vulnerability Assessments).

This information suggests that registered entities with strong controls and change management procedures typically have better data that results in more accurate Facility Ratings than those entities that have not taken meaningful steps to develop strong controls, focus on change management, or validate field conditions with Facility Ratings databases. Those entities are most prone to discrepancies that may result in noncompliance. Because of this, and because of the recurring causes of the issues identified, the ERO Enterprise believes it is important to use compliance monitoring efforts to determine how widespread the issue is among registered entities. Collaboration between the ERO Enterprise and the NATF can accelerate efforts to share best practices, including controls to ensure accurate Facility Ratings are established and maintained, and thereby address the risk posed by incorrect Facility Ratings.

Likewise, the ERO Enterprise has identified certain risks to reliability that are associated with supply chain risk management. The NATF is working with its members to develop industry practices that can address these risks. In addition, they are examining existing third-party certifications that might provide additional assurance in addressing supply chain risks.

ERO Enterprise Tools

In 2019, the ERO Enterprise made progress on the implementation of two enterprise-wide tools: CORES and Align.

CORES

In 2019, the ERO Enterprise began a managed roll-out of new software for registering entities within the ERO Portal. ERO Enterprise staff engaged the Compliance and Certification Committee (CCC), Organization Registration and Certification Subcommittee (ORCS), and the Alignment Working Group (AWG) and created a focus group to assist with the development and roll-out of the new software. There were pilot sessions in May at RF, Texas RE, and NPCC that were also open to select registered entities from WECC, SERC, and MRO. As part of the managed roll-out, these same entities were trained during the initial release of the software and were closely engaged by ERO Enterprise staff. This close engagement with registered entities provided additional input that led to additional planning, including completion of a software patch before further roll-out activities to registered entities. The fourth quarter activities included deploying the patch and resuming the managed roll-out activities. The fourth quarter roll-out continued with NPCC and will expand to additional REs through Q1 2020.

Align

NERC's management team decided to delay Release 1 of the Align tool, originally planned for the last quarter of 2019, and NERC's Board of Trustees accepted the schedule change at its August 2019 Board meeting. The primary drivers for the delay are related to ensuring data security of sensitive CMEP-related information, refining and harmonizing compliance audit and investigation business processes across the REs, and addressing stakeholder concerns regarding evidence collection. While these issues are being addressed, the project team continues with its other scheduled activities, including completing user acceptance testing, identifying critical enhancements, completing data integration and reporting efforts, and developing training materials, with the goal of launching Release 1 in 2020.

Enforcement Streamlining and Compliance History Projects

The continued evolution of risk-based enforcement requires examination of processes across the ERO Enterprise to ensure effective allocation of resources, for the ERO Enterprise as well as for registered entities, between minimal risk noncompliance and violations that pose greater risks to reliability and security. ERO Enterprise stakeholder perception survey results have highlighted registered entity interest in more efficient resolution of minimal risk noncompliance.

The EG established a project team in 2019 to identify opportunities to streamline the noncompliance review and risk assessment processes. The EG will balance streamlining activities with the need to ensure appropriate discipline and professional judgment in evaluating noncompliance and risks to reliability. The REs have already implemented several

streamlining concepts, including a sampling program for verification of mitigation completion for Compliance Exceptions (CEs). Under the verification sampling program, registered entities are only expected to provide evidence of mitigation completion if requested by the RE under the sampling program. Registered entities also must provide mitigation completion evidence if the noncompliance is selected as part of the FERC and NERC's joint annual Find, Fix, Track and Report (FFT) and CE survey. Project outputs will include guidance documents for registered entity and RE use to improve the information included in initial submissions and facilitate resolution of noncompliance.

The EG also worked in 2019 to document the methodology for consideration of registered entity compliance history when resolving noncompliance. After more than a dozen years of mandatory Reliability Standards, published criteria for evaluating compliance history can help to ensure appropriate identification of noncompliance that involves recurring conduct. The criteria will state the circumstances where prior noncompliance should or should not be considered an aggravating factor in resolution of the instant noncompliance. The documented methodology should improve efficiency for REs during the noncompliance review process. The methodology should also inform registered entities regarding the importance of robust mitigation to reduce the likelihood of recurrence of noncompliance and ensure sustainable solutions to the benefit of reliability and security.

Independent Audit of NERC's CMEP and ORCP

In 2019, the CCC worked with NERC's Internal Audit department to engage independent expert auditors to conduct an independent evaluation of NERC's CMEP and Organization Registration and Certification Program (ORCP), as required by the NERC ROP. The independent audit firm conducted a review of NERC's CMEP and ORCP procedures to determine compliance with the ROP and evaluate enhancements to the CMEP and ORCP processes following the last independent auditor review in 2016.

As a result of the interviews and testing procedures performed within the in-scope sections of the ROP, the independent auditor identified many areas where NERC generally conformed to the ROP and showed improvement from the 2016 independent evaluation. The independent auditor found that NERC has generally addressed observations from the 2016 evaluation and NERC has taken a proactive approach to continue to enhance CMEP and ORCP processes.

In addition to the areas where NERC generally conformed to the ROP, the independent auditor noted one specific observation of noncompliance with the ROP and six areas for process improvement opportunities. For the one noncompliance, NERC did not publicly post all final compliance audit reports to the NERC website as required by the NERC ROP. For the areas for process improvement opportunities, NERC has accepted the observations and recommendations and is working on action plans to address them throughout 2020.

Coordinated Oversight Program

The purpose of the Coordinated Oversight Program is to increase efficiency and eliminate unnecessary duplication of compliance monitoring and enforcement activities for Multi-Region Registered Entities (MRREs). A registered entity operating in or owning assets in two or more REs' jurisdictions with one or more NERC Compliance Registry (NCR) identification numbers is a potential candidate for inclusion in the Coordinated Oversight Program; the program is voluntary. In connection with the program, the ERO Enterprise takes into account reliability considerations, such as – but not limited to – a registered entity's registered functions, load and generation capacity, transmission assets, and transmission and generation control centers.

During 2019, the ERO Enterprise granted 28 MRREs entry into the Coordinated Oversight Program. The number of registered entities participating in the Program increased to from 197 in 2018 to 218 in 2019. For 2020, the ERO Enterprise will continue to review feedback from Coordinated Oversight CMEP experiences to support additional streamlining and improvements to the program, through program design, revisions to the guidance documents, or outreach enhancements.

Program Alignment Process

Throughout 2019, the ERO Enterprise continued to align CMEP activities across North America. The ERO Enterprise Program Alignment Process[10] (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 and NERC oversight. Examples of issues considered in 2019 included differing periods to provide follow-up evidence for FAC-008 related data requests during Compliance Audits; and inconsistent guidance by an RE on the effective date and phased-in implementation dates for certain Requirements 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 being developed. The issues submitted by the industry in 2019 have been resolved and closed.

FRCC RE Transition

In 2019, the ERO Enterprise successfully completed the transition of registered entities within the FRCC RE footprint to SERC. On February 7, 2019, the NERC Board of Trustees approved the dissolution of FRCC RE, the transfer of registered entities from FRCC RE to SERC, and the amendment of the Regional Delegation Agreement with SERC. On April 30, 2019, FERC approved the dissolution of FRCC RE in a delegated Order.[11] Following these approvals, on July 1, 2019, the ERO Enterprise transferred 35 registered entities from FRCC RE to SERC. The communication and work of NERC, FRCC RE, and SERC led to a seamless transfer for the FRCC RE registered entities. Among the tools used to ensure this seamless transfer were weekly Frequently Asked Questions, RE workshop presentations, and FRCC RE registered entity webinars. The data transfers from FRCC RE to SERC went smoothly as well, and NERC facilitated knowledge, data, and document transfers from FRCC RE to SERC for compliance monitoring and enforcement purposes. In addition, SERC hired all of the remaining FRCC RE employees, thereby retaining valuable historical information about registered entities transferring to SERC.

NERC 2019 CMEP Filings and Postings

In 2019, NERC and the REs addressed a variety of issues and questions through technical filings and analysis of information from across the North American BPS.

Five-Year Performance Assessment

In July 2019, NERC filed its Five-Year Electric Reliability Organization Performance Assessment Report with FERC.[12] In the filing, NERC discussed how the ERO Enterprise's activities build upon the certification criteria of 18 C.F.R. *§* 39.3(b), evaluated the effectiveness of each RE in carrying out its Delegated Authority, and addressed stakeholder comments on NERC's performance. The Five-Year Performance Assessment Report described several CMEP-related topics, including – but not limited to – how the ERO Enterprise has worked to do the following:

- Enhance its procedures for compliance monitoring and enforcement and improve transparency;
- Enhance procedural efficiencies in the CMEP, including through risk-based CMEP and the Align tool, implementation of the consolidated hearing process, and the Compliance Guidance policy;
- Refine how NERC conducts oversight of the REs under the CMEP oversight plans, including COPs and risk elements, audit documentation, and the Coordinated Oversight Program; and

[10] http://www.nerc.com/pa/comp/Pages/EROEnterProAlign.aspx

[11] *Letter Order Approving Dissolution of FRCC Regional Entity*, 167 FERC ¶ 61,095 (April 30, 2019), available at https://www.nerc.com/FilingsOrders/us/FERCOrdersRules/FRCC%20Dissolution%20Order.pdf

[12] North American Electric Reliability Corporation Five-Year Electric Reliability Organization Performance Assessment Report in Accordance with 18 C.F.R. § 39.3(c), available at https://www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/Five-Year%202019%20Performance%20Assessment.pdf.

- Improve participation in ERO Enterprise CMEP staff training.

Proposed Standards Efficiency Review Retirements

In June 2019, NERC filed a petition seeking FERC approval of the retirement of ten currently effective Reliability Standards in their entirety without replacement and four proposed revised Reliability Standards in which requirements from the currently effective versions of the Reliability Standards are retired.[13] The proposed retirements originated from the first phase of work under NERC's Standards Efficiency Review, which began in 2017 as a review of the body of NERC Reliability Standards to identify those Reliability Standards and requirements that were administrative in nature, duplicative to other standards, or provided no benefit to reliability.

In total, NERC proposed retiring 73 requirements and 1 requirement part, including the retirement of ten Reliability Standards in their entirety. NERC noted that none of the proposed retirements would have an adverse impact on reliability and would, to the contrary, benefit reliability by allowing entities to focus their resources on those Reliability Standard requirements that promote the reliable operation and planning of the BPS. NERC expects a FERC decision on the petition in 2020.

[13] Petition of the North American Electric Reliability Corporation for Approval of Revised and Retired Reliability Standards Under the NERC Standards Efficiency Review, available at https://www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/Final%20Petition%20for%20Approval%20of%20SER%20Retirements%20(INT,%20FAC,%20PRC,%20and%20MOD).pdf

Chapter 2: RE Oversight

NERC considers criteria developed by the CCC to measure the effectiveness and adherence of the REs to the CMEP, as detailed in CCC procedure document CCCPP10-5.[14] NERC's oversight activities indicate that the REs 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 RE program effectiveness.

NERC continued to focus enforcement oversight activities on the most serious risks to the BPS. The Full NOPs filed in 2019 informed risk focus areas for ERO Enterprise resources towards serious risk violations in 2020. REs continued to use Spreadsheet NOP (SNOP) disposition to address minimal and moderate risk noncompliance. Overall, the ERO Enterprise has maintained use of streamlined disposition for minimal risk issues. The number of registered entities using the Self-Logging Program increased from 78 in 2018 to 88 in 2019. Additionally, the ERO Enterprise continued to process a large percentage of noncompliance posing a minimal risk to the BPS as CEs. In 2019, 89.5 percent of all instances of minimal risk noncompliance were resolved as CEs, largely unchanged from 90 percent in 2018.

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 successfully align stakeholders. Additionally, the registration program has continued its work with the Organization Registration and Certification Group (ORCG) and the CCC ORCS to align ERO registration and certification work items.

The certification program focused on process improvements that included measurements of utilization, fair administration, and consistency and comparability of process parameters. NERC provided feedback to REs for certification engagements and continued to provide training for RE 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. Additionally, NERC and WECC worked with regional industry experts to ensure a seamless transition as Peak wound down its services as an RC in 2019 and was replaced by British Columbia Hydro and Power Authority (BC Hydro), RC West, and Southwest Power Pool (SPP).

Enforcement Oversight

The following enforcement metrics updates are current as of December 31, 2019.[15]

Focus on Serious Risk Noncompliance

In 2019, NERC filed 12 Full NOPs that included 209 violations of the NERC Reliability Standards and carried a total combined penalty amount of nearly $18.5 million. These Full NOPs included 38 serious, 100 moderate, and 71 minimal risk violations. The Full NOPs filed in 2019 addressed a range of serious risk issues, including:

- Multiple instances of noncompliance with CIP standards as a result of issues with implementing new tools and processes, asset and configuration management, inadequate training and management oversight, contractor and vendor failures, development of organizational silos, and a lack of clearly defined internal policies;

[14] https://www.nerc.com/comm/CCC/Related%20Files%202013/Criteria%20for%20Annual%20Regional%20Entity%20Program%20Evaluation%20Current.pdf

[15] Appendix A includes the NERC enforcement metrics-related graphs and charts.

- Communication failures caused by inadequate training; and
- Inadequate responses to losses of tools to conduct real-time assessments.

Vegetation Management and FAC-003 R2 Violations

NERC filed one Full NOP resolving a violation of FAC-003 R2 in 2019. The ERO Enterprise continues to focus on vegetation contacts and encroachments into the Minimum Vegetation Clearance Distance (MVCD) based on more vegetation encroachments on BES transmission facilities in recent years, which was reflected in increased numbers of FAC-003 R2 violations filed with FERC in 2017 and 2018. The ERO Enterprise considers both vegetation encroachments into the MVCD and actual vegetation contacts as significant risks to the reliability of the BPS and will use all appropriate compliance monitoring, enforcement, and mitigation tools to address such risks.

Spreadsheet NOPs

NERC filed 35 SNOPs that included 103 violations of the NERC Reliability Standards and carried a total combined penalty of slightly more than $900,000.

NERC's oversight of SNOPs in 2019 confirmed that the REs continue to use this disposition method appropriately. REs used the SNOP disposition to resolve minimal and moderate risk noncompliance that did not pose an elevated risk to the BPS but were not otherwise appropriate for FFT or CE treatment. Violations involving repetitive conduct, excessive durations, or a lack of commitment to compliance may not be appropriate for CE or FFT treatment despite posing minimal or moderate risks to reliability or security. Resolving such violations with settlement agreements or Notices of Confirmed Violation is intended to communicate to the registered entity that its conduct and compliance culture need improvement.

Streamlined Disposition Methods

By the end of 2019, the ERO Enterprise added 10 registered entities into the Self-Logging Program. There are now 88 registered entities self-logging, compared to 78 registered entities that were self-logging in 2018 and 67 in 2017. In addition, the ERO Enterprise processed 220 self-logged noncompliance as CEs in 2019, a nearly 40 percent increase over the number processed in 2018 and the highest number of self-logged CEs since implementation of the Self-Logging Program.

Out of 1,295 instances of noncompliance posing a minimal risk to the reliability of the BPS processed during 2019, the ERO Enterprise processed 1,159 (89.5 percent) as CEs. The ERO Enterprise processed the remaining instances of noncompliance posing a minimal risk as FFTs, SNOPs, or Full NOPs, due to linkages to other noncompliance in FFTs, SNOPs, or Full NOPs, or because of aggravating compliance history.

Annual Joint FFT and CE Review

In August 2019, NERC issued a final notice of completion for the 2018 annual review of the FFT and CE programs. NERC and FERC staff reviewed a sample of 27 out of 47 FFT possible violations posted by NERC between October 2017 and September 2018 and a sample of 37 out of 898 CE instances of noncompliance posted by NERC between October 2017 and September 2018. Sampling for the 2018 program year indicated that the REs appropriately processed all sampled possible violations as FFTs or CEs and that all of the possible violations have been adequately remediated, with the exception of remaining issues with ongoing mitigation that was not yet completed when publicly posted.

NERC noted the continued improvement in the quality of dispositions that were posted with a decreasing number of documentation concerns. Specifically, the identification of root cause and risk statements in FFTs and CEs has improved significantly over the past several years. NERC also noted ongoing improvement in the clear identification of factors affecting the risk before mitigation, as well as the lack of actual harm, which was identified in all samples.

In addition, the FFTs and CEs sampled did not contain any material misrepresentations by the registered entities. Based on these findings, NERC Enforcement staff concluded that the REs properly execute FFTs and CEs.

NERC and FERC staff started the 2020 Annual FFT and CE Programs review in Q4 2019. The data requests for the fiscal year 2019 review were sent to REs on October 7, 2019, and the REs provided evidence documents by November 20, 2019.

Compliance Monitoring Oversight

NERC Oversight Priorities

In 2019, NERC executed its RE 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 focused 2019 activities on the following oversight priorities:

- Development of risk and monitoring conclusions, including:
  - Application of professional judgment and technical justifications to risk and monitoring activities;
  - Documenting conclusions to sufficiently capture the nature and extent of work performed; and
  - Consideration and documentation of internal controls throughout all compliance monitoring activities.
- Use and consideration of Risk Elements and areas of focus in planning and executing compliance monitoring activities;
- Maturation of Compliance Oversight Plans for registered entities based on alignment work completed in 2018 and 2019;
- Consistency and Program Alignment of RE compliance monitoring implementation; and
- Implementation of NERC's 2018 oversight recommendations.

An additional oversight priority identified for 2019 was the support of the development of Align, but NERC expects the majority of the work related to compliance monitoring in the project to take place during 2020.

Supporting Activities

In 2019, NERC performed a variety of activities designed to support the identified priorities, including review and enhancement of the ERO Enterprise CMEP IP, oversight of RE compliance monitoring activities, audit observations of registered entities, and continuous monitoring of processes and 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.

Targeted Monitoring

The targeted oversight activities review specific components of the RE CMEP, which NERC uses to evaluate the oversight priorities. NERC established monthly oversight conference calls with each RE to focus on development of harmonized COP approaches, as well as to discuss recent NERC oversight engagements. NERC observed 21 registered entity audits conducted across all six REs. 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.

Results

Enterprise-wide Progress

NERC identified ERO Enterprise-wide progress in planning and executing risk-based compliance monitoring because of the oversight activities. The REs consistently met NERC's oversight objectives, including substantial progress towards addressing the opportunities for improvement identified in 2018. NERC has received satisfactory responses for all of the issues identified in the 2018 IRA-COP Review summaries and has observed the implementation of the recommendations during 2019 compliance monitoring oversight engagements.

During compliance monitoring oversight engagements and monthly oversight calls, NERC determined that the REs were using entity-specific data to evaluate the ERO Enterprise common risk factors. Using this understanding of inherent risk, the REs considered performance characteristics, such as internal controls and compliance history, in developing COPs in accordance with the current guidance.

NERC also determined the REs used the understanding of a registered entity's inherent risk and performance risk in determining which compliance monitoring tool(s) to apply, the scope of compliance monitoring engagements, Reliability Standards section, and the execution of monitoring activities (e.g. sampling, depth of testing, etc.).

Additionally, in addressing opportunities identified in 2018, NERC determined that overall the REs demonstrated improvement in the quality of documentation across the IRA, COP, and compliance monitoring activities. The continued enhancement and implementation of the CIP Evidence Request Tool (ERT) assists the ERO Enterprise in ensuring consistency in the collection of initial CIP evidence. The ERO Enterprise continues to review and improve the ERT with industry input. The ERT has been valuable in assisting RE auditors in the initial collection of CIP evidence and has set evidentiary expectations with registered entities.

Enterprise-wide Opportunities

While conducting the oversight activities, NERC identified several ERO enterprise-wide opportunities for improvement. NERC uses these opportunities for improvement in future training and oversight priorities.

NERC and the REs determined there is an opportunity to enhance the performance considerations used in the development of COPs. This enhancement will allow the REs to use available data to support understanding of the registered entity and COP determinations. NERC also determined that there was an opportunity to improve the interaction of risk elements and COPs in the planning of annual monitoring activities.

NERC determined there is a continued opportunity to understand how registered entities have mitigated reliability and security risks while achieving compliance with Reliability Standards. For example, there are opportunities to better integrate the evaluation and documentation of an entity's effectiveness in addressing or mitigating known risks, including demonstrating compliance and sharing best practices with industry. While progress was made concerning some Reliability Standards (e.g., FAC-008-3 and CIP-010-2), the opportunity remains, especially around more complex standards (e.g., TPL-001-4 and CIP-005-5), as well as for areas of focus identified in the 2020 CMEP IP risk elements. This includes enhancing RE proficiency in understanding and evaluating internal controls related to these standards. Similarly, there are opportunities for improvement in the use of network assessment tools as it relates to CIP-005 to achieve consistent ERO Enterprise usage of and results from such tools.

Based on the opportunities identified above, NERC and REs will coordinate to assess guidance and training needs for 2020.

Continuous Monitoring

Continuous monitoring consists of NERC staff's ongoing review of processes and information to evaluate RE program effectiveness. Throughout 2019, NERC collected and reviewed COPs, Compliance Audit reports, and Audit notification letters (ANLs).

Registered Entity Post-Audit/Spot Check Feedback Surveys

In 2019, NERC received 66 surveys from registered entities within six REs for recent compliance monitoring activities. Overall, NERC concluded that registered entities agreed that RE audit staff conducted Compliance Audits and Spot Checks in a professional, efficient, and effective manner. Survey responses also indicated opportunities to communicate better ERO Enterprise expectations around internal controls and their relation to compliance monitoring activities. Further, survey responses identified a need for REs to more clearly communicate audit results, as well as enhance communication of risk results and how IRAs, annual IPs and risk elements, and other considerations ultimately affect compliance monitoring activities and scopes. NERC will continue to monitor this type of registered entity feedback and will work with the REs to help ensure registered entities understand findings as well as how risk and internal controls inform COPs and monitoring activities.

Compliance Audit and Spot Check Reports

In 2019, NERC focused its review of Compliance Audit and Spot Check reports to ensure all compliance monitoring activities were performed and results properly reported. NERC reviewed all Q1 and Q2 Compliance Audit and Spot Check reports and validated that the compliance monitoring activities were completed.

Audit Notification Letters for 2019 Completed Audits and Spot Checks

NERC received and reviewed Audit Notification Letters (ANLs) for all Compliance Audits conducted during 2019. NERC's review ensured the REs were following the NERC ROP process and using the appropriate ERO Enterprise templates.

All six REs included all pertinent audit information for all Compliance Audits and Spot Checks on the 2019 schedule. NERC reviewed a sample of ANLs related to 35 registered entities on the 2019 audit schedule and determined that the REs were consistently following the ANL program, adhering to the 90-day ANL requirement, and properly including standards and requirements selected for audit. REs were also clearly identifying the audit team members and participants in the ANL. NERC noted that REs effectively notified registered entities when monitoring activity information changed, such as onsite date, personnel, or scope, including by issuing revised ANLs when appropriate.

Technical Feasibility Exceptions

In September 2019, NERC filed its *2019 Annual Report on Wide-Area Analysis of Technical Feasibility Exceptions*[16] with FERC. The report noted that the number of registered entities engaging in the Technical Feasibility Exception (TFE) program has stabilized, increasing from 120 registered entities in 2018 to 123 registered entities in 2019. TFE activity, such as requests for new TFEs, modifications of existing TFEs, and terminations of TFEs, has decreased significantly since the last report. Thirty-five registered entities had TFE activity in 2019 compared to 94 registered entities that had TFE activity in 2018. As a result, the REs have been able to evaluate better the risk and impact of TFEs and gain a better understanding of the benefit of the TFE process compared to the administrative burden it places on registered entities and REs. 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 REs are considering alternatives to the current TFE program to alleviate the administrative burden on registered entities and the ERO Enterprise. As NERC and the REs consider alternatives to the TFE program, NERC will consult with FERC staff and request FERC approval for any changes to the NERC ROP.

Certification Oversight

2019 Certification Completions

During 2019, NERC certified, upon recommendation from the RE, one new Balancing Authority (BA), three new RCs, and three new Transmission Operators (TOPs). Onsite reviews of 14 already certified and operational entities were performed, including four footprint changes, seven control room relocations, and three Energy Management Systems (EMS) upgrades.

[16] https://www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/TFE%20Annual%20Report%202019.pdf

2019 Accomplishments

NERC continued to provide certification program oversight through direct participation in all certification engagements as required by NERC's ROP and participation on biweekly ORCG calls. In 2019, certification program oversight was supplemented by tracking fundamental program measures in the areas of utilization, fairness of administration, and consistency and comparability of executed process parameters. NERC oversight in 2019 also included evaluating the 2018 Stakeholder Perception Survey responses, developing recommendations as appropriate, and providing program-level feedback to RE and NERC certification staff.

The shift in program workload associated with review of changes at already certified and operational entities continued in 2019 with additional pressure to certify new registered entities prompted by industry changes.

It is interesting to note that changes in entity footprint have had the net effect of reducing the number of registered BAs and TOPs over time. No new entity certifications were in-process at the end of 2019; however, four certification reviews were in-process – two Control Room relocations and two EMS upgrades – with several others in preliminary stages of notification that have not yet been initiated.

No certification appeals were in process in 2019, and no new appeals were received.

NERC continued providing program-level feedback to REs for certification engagements. ROP amendments were drafted in 2019 in collaboration with the REs that will clarify program expectations and improve consistency and comparability of delegated activities.

NERC continued to make Fundamentals of Auditing and Gathering Quality Evidence modules available to ERO Enterprise personnel and Industry subject matter experts through NERC's learning management system and on-demand computer-based training modules. Additionally, 35 ERO Enterprise CMEP staff completed Certification Team Lead classroom training delivered in 2019. The Certification Team Lead training is expected to be revised in 2020 to coincide with implementation of the ROP amendments and program enhancements.

Transition of RC Responsibilities in the Western Interconnection

In August 2018, Peak announced the wind down of its organization and the transition of RC services from Peak to alternative providers at the end of 2019. NERC, WECC, and industry experts across the Western and Eastern Interconnections assured continuity of the RC function through a collaborative effort involving outreach, communication, Certification, Registration, and other ERO activities as appropriate.

Before Peak's dissolution, 36 BAs and 49 TOPs were transitioned to and began operating under the authority of their new RCs, providing situational awareness and real-time monitoring of more than 110,000 miles of transmission in all or parts of 14 Western States, British Columbia, and Baja California, Mexico.

In 2019, the new RCs in the Western Interconnection completed their preparations and were certified to operate the new RC Areas. Each had periods in which Peak shadowed the operations of the new RCs before each new RC becoming the RC of record in their respective Area. On July 1, 2019, RC West commenced RC operations for its California footprint. On September 2, 2019, BC Hydro commenced RC operations in its footprint. On November 1, 2019, RC West expanded its RC Area. On December 3, 2019, SPP commenced RC operations for a western RC Area in addition to the RC Area it already operated in the Eastern Interconnection.

Registered Entity Post-certification Feedback Surveys

In 2019, 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. NERC determined in 2018 that the ERO Enterprise has the opportunity

to document expectations better before onsite visits and revise program templates to allow more targeted responses. Revised entity questionnaires were used in 2019 during the RC certifications to great benefit of the Certification team. In 2019, several registered entities commented on the value of the dialogue with team members during the onsite visit as well as flexibility in response to onsite schedule changes to accommodate project uncertainties.

Registration Oversight

NERC is ultimately responsible for determining which BPS users, owners, and operators are subject to approved Reliability Standards and for maintaining the corresponding NCR of organizations. In carrying out these responsibilities, NERC relies on the REs to apply and implement registration criteria as part of the Organization Registration Program. NERC conducts annual official oversight engagements of each RE. In 2018, the notice was sent in the beginning of Q4 and was reviewed by NERC staff in December of 2018 and Q1 of 2019. In its oversight engagement, NERC asked for several demonstrations of day-to-day activities for various registration change activities and updated processes and procedures (as applicable). A similar process occurred in 2019, with a notice sent in Q4, and NERC will conduct oversight engagements through Q1 of 2020.

2019 Registration Changes

NERC verifies registration change activity before approval and reviews documentation relating to change requests to the registry. In 2019, NERC processed 265 functional registration changes, including 161 function activations and 104 function deactivations, not including the 35 registered entities transferred from FRCC to SERC. Of the 104 function deactivations, the following were found:

- Thirty-two were due to compliance responsibilities assumed by another registered entity,
- Twenty-five were consolidated into a mutually owned entity registration,
- Sixteen were physically shutdown,
- Fifteen were determined to not meet registration criteria,
- Twelve were sold to another registered entity,
- Three were determined to be registered as DP-UFLS, and
- One was due to a NERC-Led Panel determination.

FRCC RE Registration Changes

On July 1, 2019, the ERO Enterprise transferred 35 registered entities from FRCC RE to SERC under FERC's Order approving the dissolution of FRCC RE.

Registration Change Activity

NERC has visibility into all proposed registration changes synced by the REs. NERC's oversight in this critical activity is focused on the RE's adherence to the NCR criteria. Each RE provides detailed information based on the function, change request, and other information asked for by NERC. Oversight of each facet of the registration change activity process is crucial to ensure consistent approaches are being implemented by each of the REs. In 2019, NERC continued to ask questions about day-to-day RE activities as part of its registration oversight.

Registration Alignment

The NERC ORCG and the CCC ORCS continue to collaborate on ERO Enterprise registration and certification work items. The ORCG consists of NERC and the REs, and the ORCS is a subcommittee of the CCC consisting of industry participants with NERC support. The two groups began working together in 2017. Since then, the groups have worked together closely on proposed ROP changes, Information Technology project efforts, certification schedule and program improvement opportunities, and emerging registration issues.

CORES Tool

In 2019, the ERO Enterprise worked to improve and standardize the registration process within a new registration system. Extending the functionality delivered with the Coordinated Functional Registration tool, the new CORES Tool will also use the ERO Portal and Enterprise xRM platform to provide entity information to the CMEP system for use in compliance monitoring and enforcement. The members of the ORCG, ORCS, and the AWG – along with a small focus group of registered entities – worked throughout 2019 with NERC staff to ensure registered entities experience a smooth transition when the new system was brought online in 2019.

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.[17]

In 2018 and 2019, NERC led a small group of REs to modify the BES Reference Document. The previous version of the document was dated 2014 and was developed when the BES definition was drafted. After several years of implementing the definition, NERC and the REs determined it was appropriate to review the document and make revisions. NERC oversaw activities in 2018, which included posting the revised document for comment, hosting a webinar for industry awareness, and consideration of the industry's comments.

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 2019, NERC reviewed, or is in the process of reviewing, the following Exception Requests and Self Determination Notification Requests:

- Recertified three Exclusion Exception Requests from MRO,
- Approved one Exclusion Exception Request from MRO,
- Ongoing review of one Exclusion Exception Request from WECC, and
- Approved one Exclusive Self-Determination Notification Request.

In 2020, NERC will continue to administer its BES process and oversight work as required by Appendix 5C of the ROP.

Improvements in RE Oversight

In 2020, NERC will take steps to clarify the audit and oversight responsibilities of its Internal Audit group and its Regulatory Programs group (Compliance Assurance, Enforcement, and Registration and Certification) as they relate to evaluating the work of the REs. In particular, NERC's efforts will focus on avoiding duplicative efforts between the audit engagements conducted by Internal Audit and the oversight engagements conducted by Regulatory Programs; and using risk-based approaches for the work done by both Internal Audit and Regulatory Programs when evaluating the performance of the REs.

[17] 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).

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 REs (WECC, MRO, and NPCC) have agreements with applicable governmental authorities in each province that provide the affected REs and NERC with province-specific compliance monitoring and enforcement responsibilities. NERC and the REs with responsibilities in Canada provide the NERC Board of Trustees Compliance Committee with periodic updates on Canadian CMEP activities.

Chapter 3: 2019 Metrics Highlights

In 2019, the ERO Enterprise observed an increase in the average age of open noncompliance, rising from slightly less than 12.0 months at the start of the year to 13.0 months by the end of 2019. The average age of noncompliance has risen steadily for approximately two years, driven by increasing volume of noncompliance reported to the ERO Enterprise and significant compliance failures that required more time to process. Several of the larger compliance failures were completed in 2019, resulting in an increased number of serious and moderate risk violations processed during the year, including those with prior relevant compliance history that could be considered aggravating when assessing a penalty. Taking the time to address fully these significant risks to the reliability to the BPS was an appropriate use of ERO Enterprise resources.

Despite these challenges, the ERO Enterprise increased the number of registered entities approved for the Self-Logging program and saw a significant increase in the number of self-logged CEs in 2019. In addition, the number of CEs processed in 2019 reached new heights, and the total number of noncompliance processed in 2019 was significantly higher than in the past few years, showing the benefit of streamlined disposition methods.

Mitigation Completion Status

For all REs, 100 percent of mitigation for noncompliance discovered in 2014 or before has been reported as complete. Registered entities have made significant progress in mitigating older noncompliance from 2015-2017, with nearly 90 percent or more of noncompliance discovered in those years having been mitigated.

Self-Logging Program Participation

In 2019, the ERO Enterprise continued to push for more registered entities to apply to join the Self-Logging Program, and saw the addition of 10 registered entities, bringing the total up to 88 registered entities. 2019 also saw a nearly 40 percent increase in the number of self-logged CEs over 2018's numbers, and self-logged CEs reached the highest levels since implementation of the Self-Logging Program.

Serious Risk Issues

NERC filed ten Full NOPs in 2019 that each included at least one serious risk violation. Eight of the serious risk packages involved CIP Standards, while the two non-CIP violations involved vegetation management and Facility Ratings. The penalties assessed for these Full NOPs with serious risk violations ranged from approximately $120,000 to $10 million, reflecting the gravity of the violations and signaling to registered entities the importance of avoiding the conduct and underlying root causes that led to those violations.

Streamlined Disposition

Approximately 81 percent of all noncompliance processed in 2019 was processed via the CE and FFT disposition methods, which require no settlement agreement and have no penalties associated with them. This was a slight decrease from 2018, which saw approximately 85 percent of all noncompliance processed via the CE and FFT disposition methods. This drop is due to a significant increase in the number of Full NOP violations processed in 2019 compared to 2018, despite a large increase in the number of noncompliance processed as CEs and FFTs in 2019 (1,317) as compared to 2018 (818). Therefore, the small decrease in the percentage of noncompliance processed via the CE and FFT disposition methods is not a cause for concern at this time.

Caseload

The average age of noncompliance has risen to 13.0 months, exceeding the desired target level of 12.0 months or less and is now at its highest point since 2014. Since the spring of 2017, when the average age of noncompliance was at 7.0 months, it has steadily risen. The rise in average age is likely a ripple effect of a large set of Reliability Standards that went into effect in July 2016, including the CIP Version 5 Standards, which were the source of approximately two-thirds of the reported noncompliance in 2019. The increase in average age of noncompliance began just a few

months beyond the one-year mark of several standards going into effect in July 2016 and a corresponding rise in discovered noncompliance. The average age of noncompliance is likely to remain at higher levels until the number of reported noncompliance falls, enforcement streamlining efforts gain further traction, and the REs resolve their oldest, most complex violations. The increase in the average age of noncompliance highlights the importance of further streamlining the work involved in processing minimal risk noncompliance to ensure that the ERO Enterprise and registered entities are able to identify and mitigate higher risk noncompliance more efficiently.

Repeat Moderate and Severe Risk Violations

As a response to the FERC Five-Year Order,[18] NERC has been measuring the number of repeat noncompliance posing a moderate or serious risk.[19] In its Five-Year Order, FERC identified repeat noncompliance as a key indicator of the effectiveness of the CMEP in recognizing, mitigating, and preventing violations.

To measure the effectiveness of the risk-based CMEP on reducing noncompliance, NERC reviews moderate and serious risk violations and includes them in one of three categories:

- Noncompliance with no prior compliance history,
- Noncompliance with prior compliance history that does not involve similar conduct, and
- Noncompliance with compliance history that includes similar conduct.

The number of moderate and serious risk noncompliance with similar prior conduct rose significantly in 2019 after several years of a downward trend. This increase was due to several Full NOP settlements that were processed in 2019 that had large numbers of moderate and serious risk noncompliance with similar prior conduct, resulting in significant penalties.

In 2019, NERC filed 102 violations with moderate or serious determinations that had prior noncompliance with similar conduct, returning to levels last seen in 2016, when NERC filed 111 such violations. In 2017, NERC filed 48 violations with moderate or serious risk determinations that had prior noncompliance with similar conduct and filed 23 such violations in 2018. The ERO Enterprise will continue to monitor the level of moderate or serious risk violations with similar conduct and engage in outreach with registered entities to ensure they are adequately addressing root causes of noncompliance and implementing effective internal controls to reduce the risk of noncompliance that does occur.

Self-Assessment and Self-Identification of Noncompliance

Registered entities typically self-identify noncompliance for approximately 80 percent of new noncompliance. In prior years, NERC tracked self-identification of noncompliance by including Self-Reports (and self-logs), self-certifications, and periodic data submittals. In 2018, NERC began to track Self-Reports (and logs) separately, as indicators of a registered entity's rate of self-assessment and found that 76.2 percent of the noncompliance was self-reported or logged. In 2019, 74.9 percent of the noncompliance was self-reported or logged. The slightly lower percentage appears to be the result of a decrease in total reported noncompliance while audit findings remained at approximately the same level as in 2018. While NERC continues to encourage prompt and accurate self-reporting, the 2019 percentages are not a cause of concern at this time.

[18] "[W]e direct NERC to include an analysis of repeat violations in its next Performance Assessment that will allow NERC, the REs, and FERC to evaluate whether NERC's compliance and enforcement efforts have been effective in improving registered entities' compliance and overall reliability." North American Electric Reliability Corporation, *Order on the Electric Reliability Organization's Five-year Performance Assessment*, 149 FERC ¶ 61,141 at P 39 (2014).

[19] This metric focuses on the noncompliance posing the most significant risks to the BPS. A number of repeat noncompliance stems from high frequency conduct. These typically pose a minimal risk to reliability, particularly if identified promptly. Regardless of the level of risk, it is important to identify and mitigate the underlying cause of noncompliance adequately to prevent repeat conduct that could pose a greater risk.

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 2019, the ERO Enterprise received seven new proposed Implementation Guidance documents from Pre-Qualified Organizations and Standards Drafting Teams. The ERO Enterprise reviewed and endorsed two Implementation Guidance documents and declined to endorse four Implementation Guidance documents. Additionally, the ERO Enterprise carried over three proposed Implementation Guidance documents from 2018 that were still under review at the beginning of 2019; two were ultimately endorsed and one was not endorsed. The ERO Enterprise also developed and posted three CMEP Practice Guides in 2019. Finally, NERC conducted an industry survey to gauge the effectiveness of the Compliance Guidance program, and a Compliance Guidance improvement plan for 2020 was developed in late 2019 based on the results of the survey.

Reliability Standard Audit Worksheets

During 2019, NERC issued announcements for eight Reliability Standard Audit Worksheets (RSAWs) available on the NERC public website.[20] NERC also provided draft RSAWs for draft Standards, which are typically found on the project pages under Reliability Standards under Development.

IRAs and Reviews of Internal Controls

During 2019, all REs completed IRAs for all entities registered as RCs, BAs, or TOPs. All REs also assessed the need to review and refresh existing IRAs and have been updating them as needed. Completion plans consider the total number of registered entities, registered functions, risk priorities, and regional resources. REs continue to conduct internal control review activities and implement processes for conducting reviews of internal controls during CMEP activities, such as audits.

[20] https://www.nerc.com/pa/comp/Pages/Reliability-Standard-Audit-Worksheets-(RSAWs).aspx

Chapter 4: Looking Ahead to 2020

Priorities for 2020

To guide enforcement and compliance monitoring activities in 2020, NERC has identified the following priorities:

- Complete and deliver Release 1 of the Align tool;
- Provide training and education to RE CMEP staff to enhance the ERO Enterprise work products (e.g., working papers);
- Continue to focus on program alignment, including consistency efforts on non-monetary penalties, mitigation, coordinated oversight for MRREs, training exercises, technical training, documentation, and risk assessments;
- Monitor the progress of the ERO Enterprise's enforcement streamlining efforts by examining the balancing of efficient resolution of minimal risk noncompliance with timely, comprehensive resolutions of higher risk violations;
- Begin rollout of new Compliance Oversight Plans for engagements in 2020;
- Continue to focus on how registered entities have mitigated reliability and security risks while achieving compliance with the Reliability Standards, including applicable internal controls; and
- File proposed revisions to the NERC ROP, specifically around the CMEP and ORCP, with FERC for approval.

2020 Metrics

In 2020, the ERO will continue to monitor and report on key CMEP and ORCP activities. Some of these metrics will also appear in the ERO Dashboard.[21]

[21] Starting in 2019, NERC developed a more limited set of "dashboard metrics" that are focused on aggregate registered entity performance on certain key indicators of reliability risk to the BPS. The 2019 Dashboard Metrics separate industry performance from NERC's performance, allowing a clearer view of aggregated registered entity performance and the risk to the reliability of the BPS. The 2019 Dashboard Metrics are focused on the following six areas: no Category 4 or 5 events; compliance violations; protection system misoperations; events caused by generating units forced outages due to cold weather; outages of AC transmission lines due to human error, substation equipment failures, failed circuit equipment, or vegetation encroachment; and unauthorized physical or electronic access.

Appendix A: Enforcement

Information regarding the ERO Enterprise's Enforcement activities and metrics is provided below, focusing on noncompliance inventory; identification, mitigation, disposition, and risk of noncompliance; and vegetation management.

Noncompliance Inventory

Open Noncompliance in the ERO Enterprise Inventory

The ERO Enterprise's open noncompliance inventory consists of noncompliance reported to the REs or NERC that has not yet been processed by filing with FERC (Full NOPs and SNOPs), public posting on the NERC website (FFTs and CEs), or being dismissed. As of the end of 2019, Figure A.1 shows that the open noncompliance inventory is primarily comprised of noncompliance reported from 2017-2019, with one percent of the currently open noncompliance reported before that period.

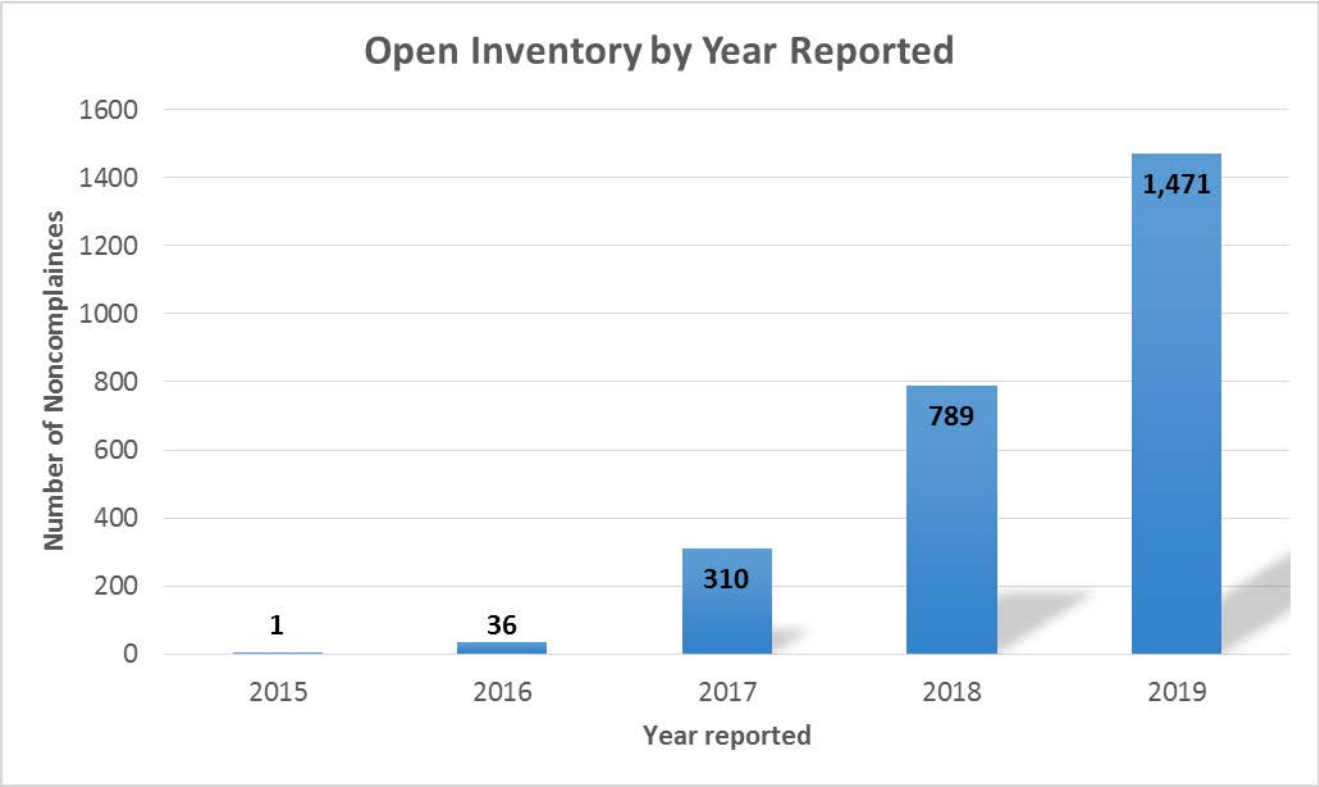


Figure A.1 ERO Enterprise's Inventory by Year Reported

Reported Age of Noncompliance in ERO Enterprise Inventory

Figure A.2 shows the age of all open noncompliance in the ERO Enterprise inventory. In 2019, the percentage of inventory that was between one and two years old dropped from 37 percent to 30 percent, but the percentage of inventory that was over two years old increased from 7 percent to 14 percent. Information about mitigation of the oldest noncompliance in inventory can be found in the "Mitigation of Noncompliance" discussion below.

The aging ERO inventory is a result of the large number of discovered noncompliance based on Reliability Standards that went into effect in 2016 and increasingly complicated technical reviews required to process violations of some of the newer Reliability Standards. The rate of discovery of noncompliance appears to have leveled off after a significant increase in 2017, but remains significantly higher than levels seen since 2014. If this trend continues, it should help with processing and reduce the average age of noncompliance in 2020; however, a number of new and revised Standards are coming into effect in 2020, which may cause another increase in reported noncompliance.

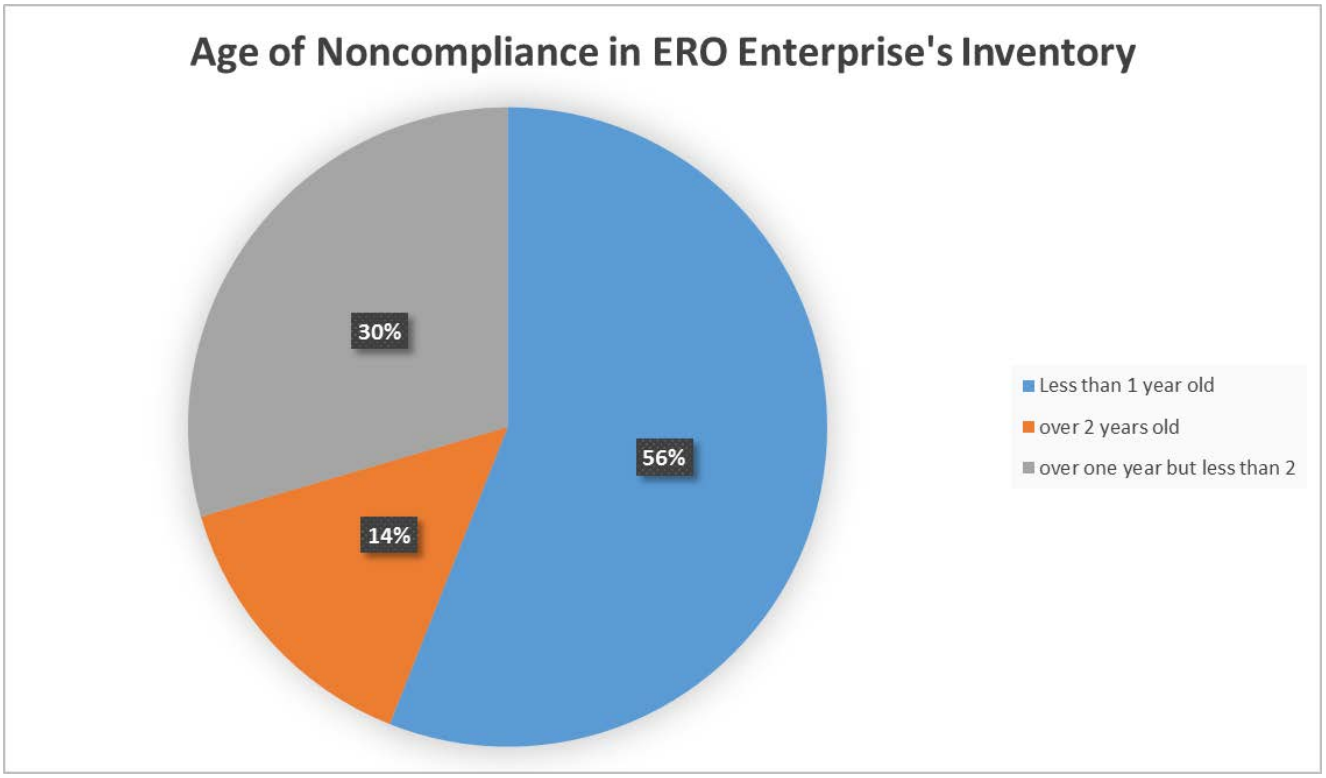


Figure A.2: Age of Noncompliance in ERO Enterprise's Inventory

Average Age of Noncompliance in the ERO Enterprise Inventory

Figure A.3 shows that the average age of noncompliance in the ERO Enterprise's inventory at the end of 2019 was 13.0 months.[22] The average age of noncompliance increased from 12.0 months at the end of Q1 to 12.1 months at the end of Q2, then from 12.4 months at the end of Q3 to 13.0 months at the end of Q4. The average age of noncompliance in the ERO Enterprise inventory has been steadily increasing since September 2017 when it was at 7.0 months. The oldest open inventory is largely comprised of CIP noncompliance, with smaller numbers of noncompliance involving Facility Ratings and Protection System maintenance and testing. Noncompliance with the currently effective CIP Standards represents approximately two-thirds of all open noncompliance in the inventory. More specifically, noncompliance with CIP-007-6 and CIP-010-2 make up just over a third of all noncompliance in the inventory (20.6 percent for CIP-007-6 and 14.1 percent for CIP-010-2).

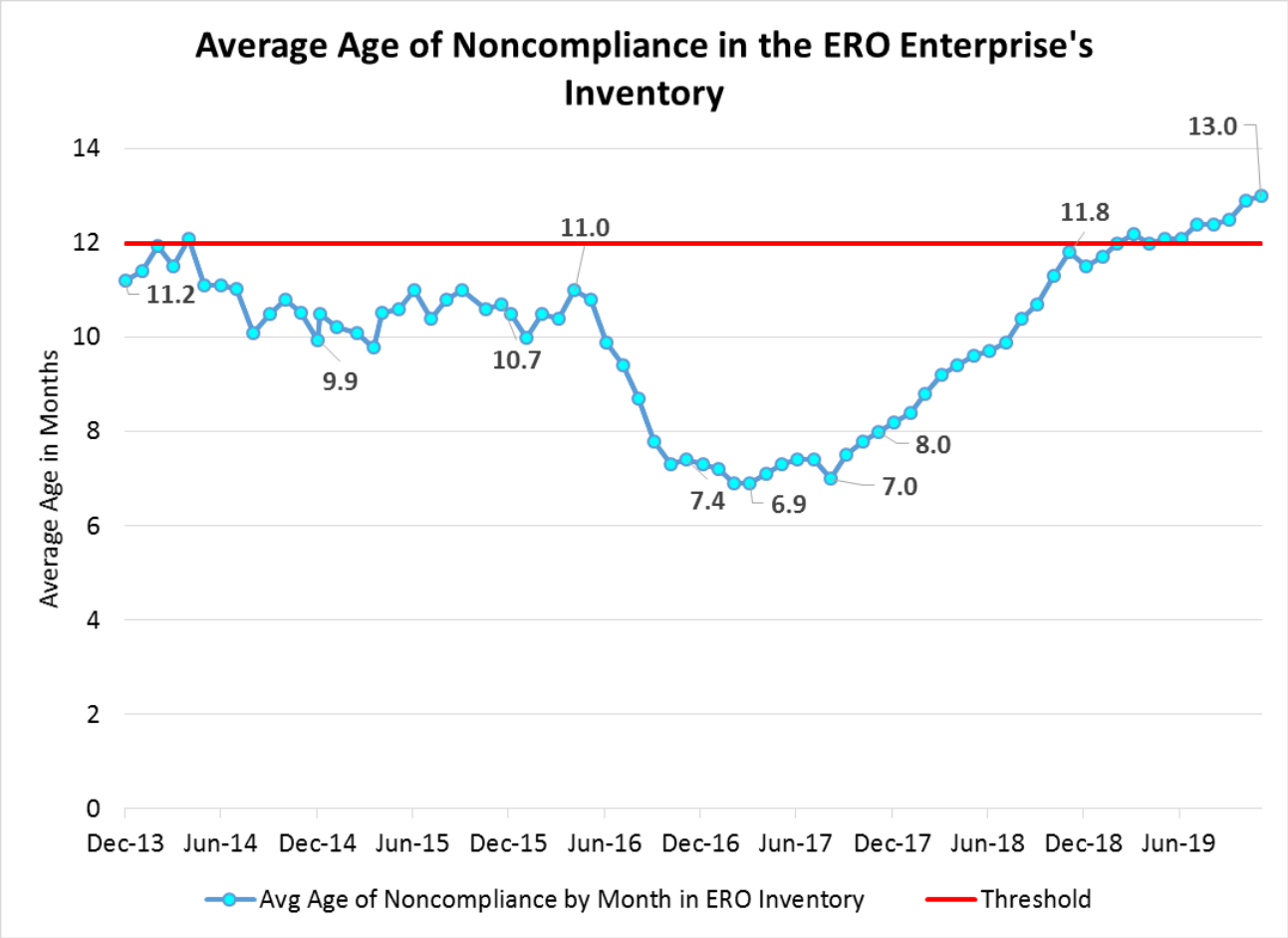


Figure A.3: Average Age of Noncompliance in the ERO Enterprise Inventory

[22] The age of noncompliance runs from the time the noncompliance is identified to the time it is resolved (*e.g.*, through CE, FFT, SNOP, or Full NOP processing).

Identification of Noncompliance

Number of New Noncompliance Discovered in 2019

Figure A.4 shows the rate of new noncompliance discovered in 2019 remained at an elevated level, with 1,754 noncompliance discovered, compared to 1,868 in 2018. This appears to be due in large part to significant numbers of CIP noncompliance (approximately 66 percent of all reported noncompliance) and non-CIP noncompliance that have multi-year implementation plans.

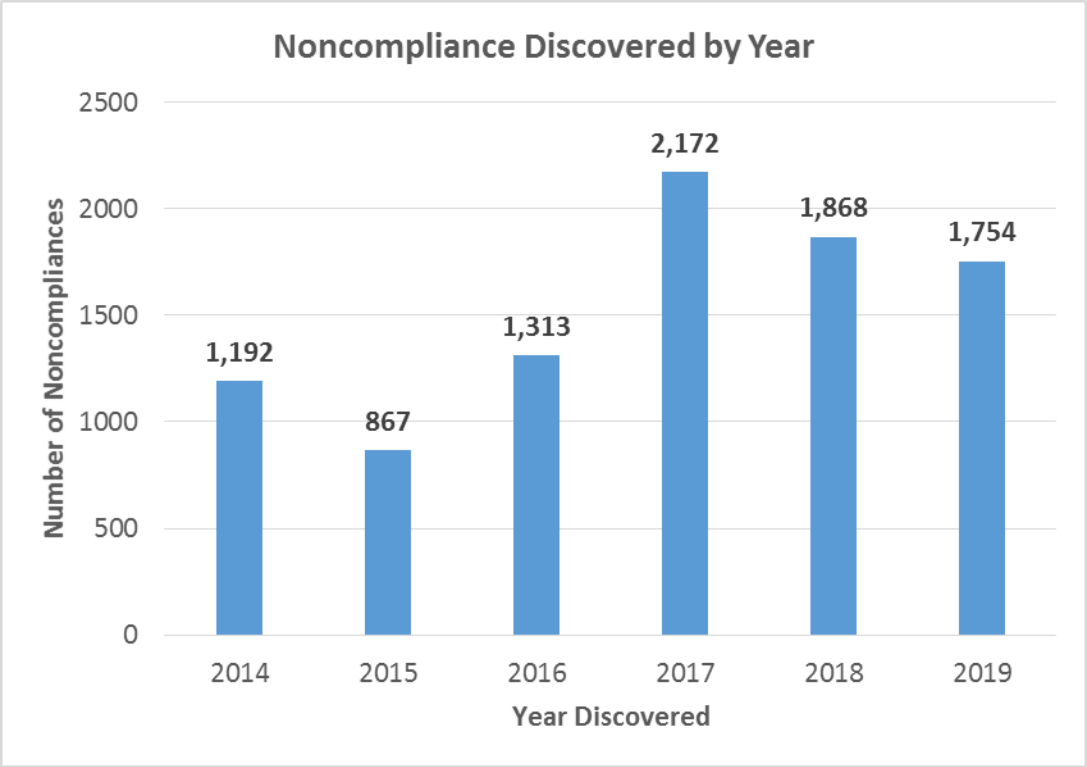


Figure A.4: Noncompliance Discovered by Year

Noncompliance Trends

The 1,754 new noncompliance discovered in 2019 is at approximately the same level as the 1,868 noncompliance discovered in 2018, but this represents a decrease from its recent high of 2,172 noncompliance discovered in 2017. The level of noncompliance reported to the ERO Enterprise remains significantly higher than in 2015 and 2016, when 867 and 1,313 noncompliance were discovered, respectively. While this number is still elevated from earlier years, the trend over the last few years, as shown in Figure A.5, has been a modest reduction in discovered noncompliance, which seems to confirm earlier projections by NERC that the pace of new noncompliance would follow the pattern of prior spikes in reported noncompliance following the introduction of new Reliability Standards.

During prior spikes in reported noncompliance, the surge in noncompliance lasted for approximately three years, with the first full year after the implementation of new Reliability Standards being the peak. If this increase follows a similar pattern, the decreases in discovered noncompliance seen in 2018 and 2019 should continue in 2020. Any decrease would follow ERO Enterprise outreach efforts and registered entities' familiarity with the requirements necessary for compliance with the new Standards, as well as the ERO Enterprise completing compliance monitoring activities for the applicable registered entities; however, a number of new and revised Standards are coming into effect in 2020, which may cause another increase in reported noncompliance. As discussed above, the ERO Enterprise has provided numerous outreach activities in 2019 to help prepare registered entities for the new and revised Standards coming in 2020.

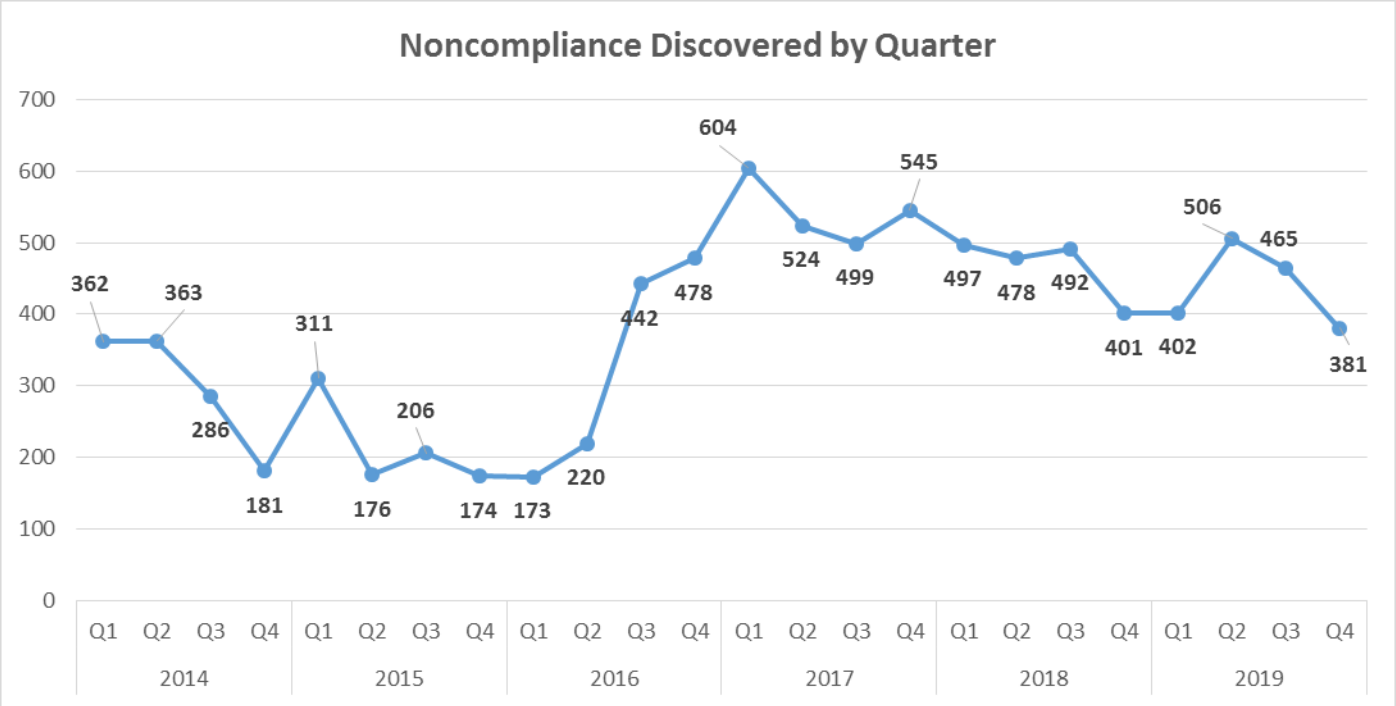


Figure A.5: Noncompliance Discovered by Quarter (2014-2019)

Self-Assessment and Self-Identification of Noncompliance

Figure A.6 illustrates registered entities' internal and external identification of noncompliance by year. The percentage of internally discovered noncompliance fell slightly in 2019 to approximately 78 percent of all reported noncompliance, slightly below the 80 percent internally discovered noncompliance in 2018. Audit findings increased in 2019 to approximately 21 percent of all reported noncompliance, with three percent of noncompliance discovered in 2019 identified in Self-Certifications and slightly under one percent of noncompliance in 2019 discovered through Spot Checks. In 2019, the level of externally discovered noncompliance reached its highest level since 2014; however, it remains close to the levels seen in 2018 and below levels seen in the 2012-2014 period. While the ERO Enterprise will continue to monitor this trend, it does not appear to be a cause for concern at this time.

In 2019, the ERO Enterprise looked beyond the broad categories of internal and external discovery and monitored self-reported issues as part of an effort to reduce risk from noncompliance. Figure A.7 shows the percentage of noncompliance by discovery method in 2019. The percentage of self-reported noncompliance varied quarterly, but stayed within a tight range of 74 to 76 percent. Over all of 2019, registered entities self-reported approximately 75 percent of noncompliance. The percentage of audit-identified noncompliance and self-certified noncompliance varied more quarter to quarter, ranging between 18 and 25 percent for audits, and 0.5 and 6.5 percent for self-certifications.

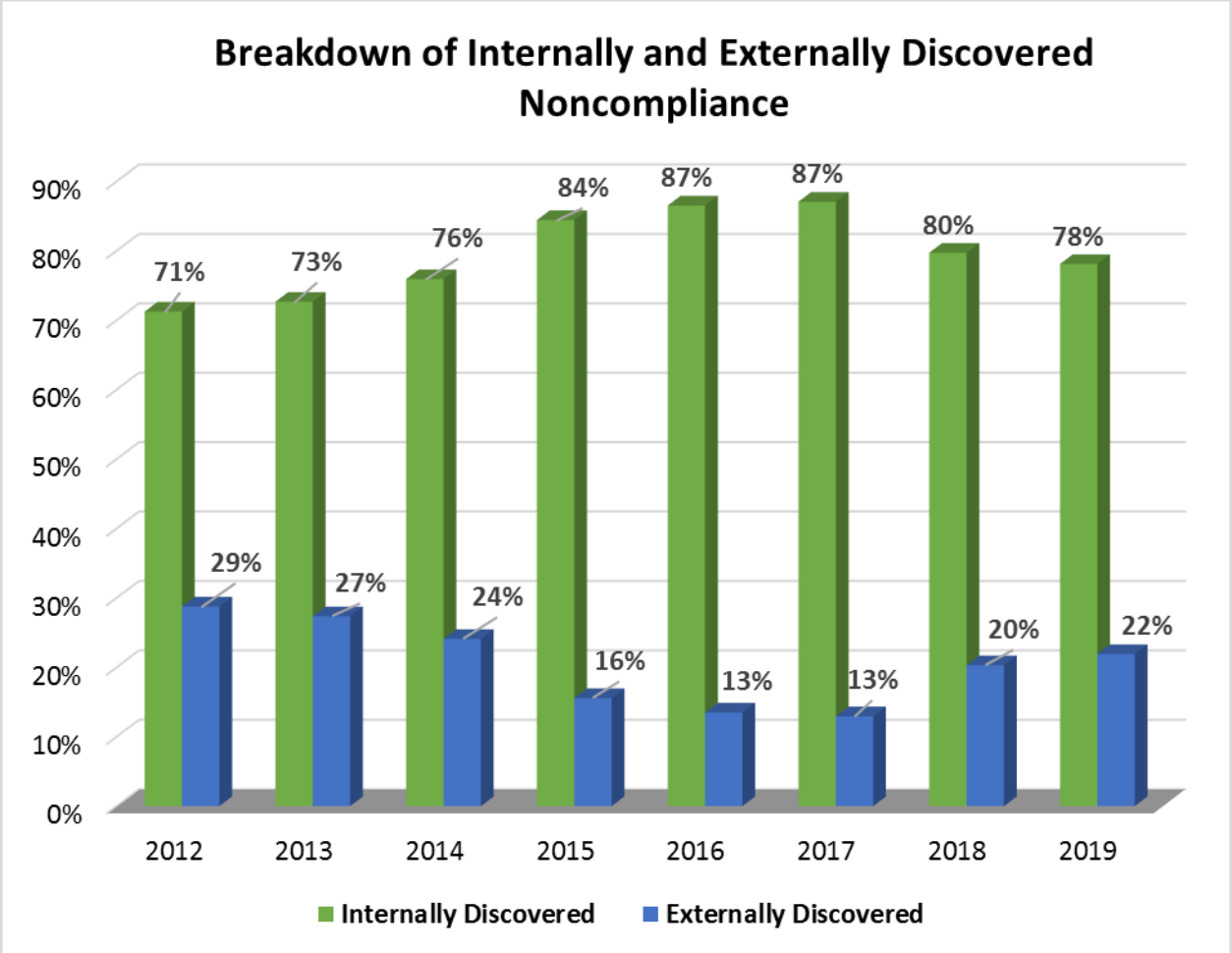


Figure A.6: Breakdown of Internally and Externally Discovered Noncompliance by Year

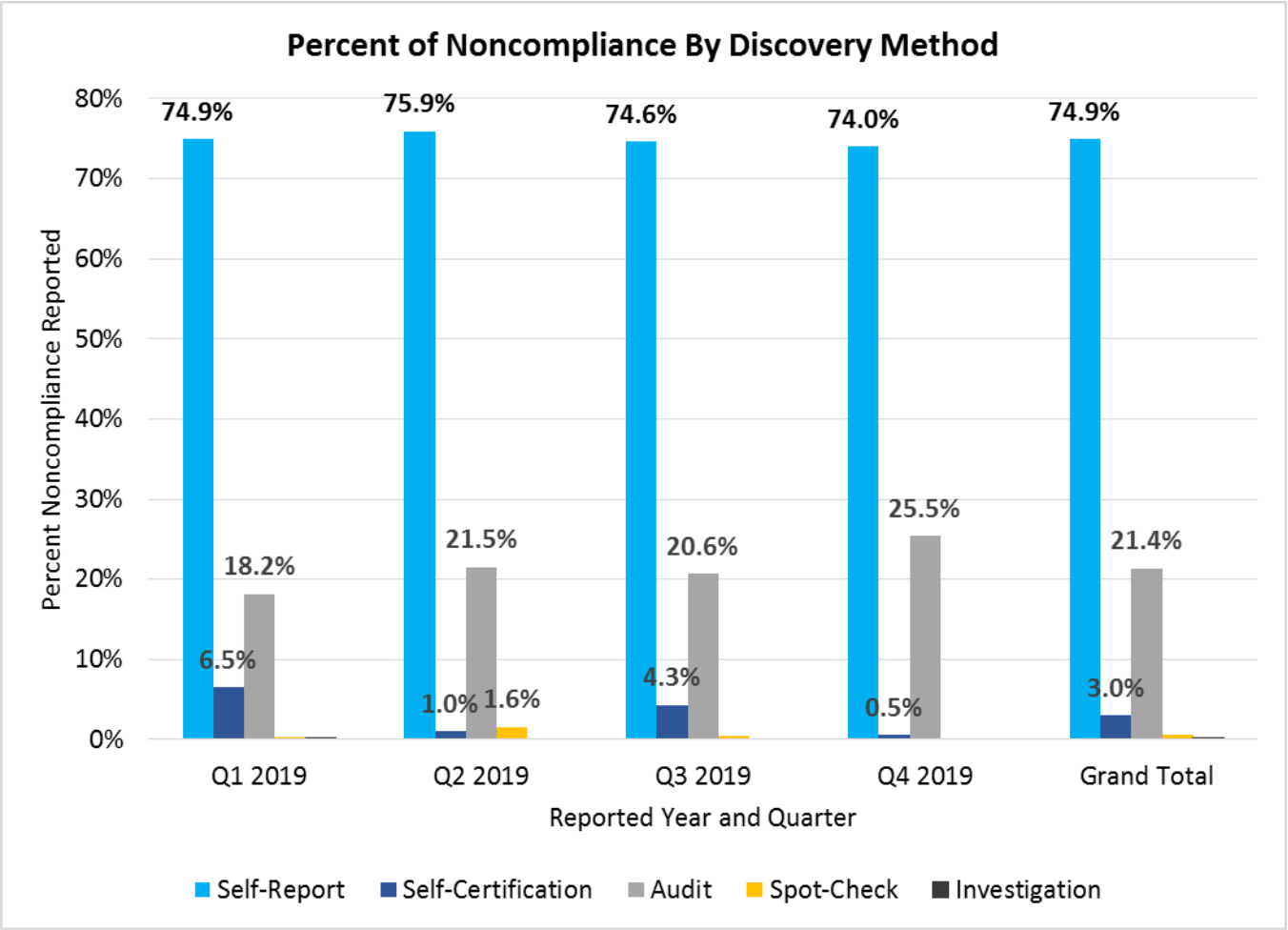


Figure A.7: Breakdown of Noncompliance by Discovery Method

Mitigation of Noncompliance

Mitigation Completion Status

Registered entities continue to make progress in mitigating the older noncompliance they have reported as shown in Table A.1. Mitigation of the oldest noncompliance, dating from 2016 and earlier, is largely complete. There were verified mitigation completion dates for 96 percent of noncompliance reported in 2016, 99.2 percent of noncompliance reported in 2015, and 100 percent of noncompliance reported in 2014 or earlier. Approximately 90 percent of the pre-2018 noncompliance without verified mitigation completion dates involves noncompliance that has been certified as complete but have not yet been verified complete by the RE, has mitigation activities that have passed the expected completion date (and presumably have been completed), or has a future completion date, ensuring risk to the BPS is being addressed. Only about 10 percent of the pre-2018 noncompliance without verified mitigation completion dates are part of ongoing discussions between REs and registered entities regarding appropriate mitigation activities. NERC continues to monitor these noncompliance as priorities for mitigation completion.

Table A.1: Mitigation Completion Status of Noncompliance by Year Reported

Time Frame	Required Mitigation	Noncompliance Without Verified Mitigation Completion Date	Percentage of Noncompliance with Verified Mitigation Completion Date
2014 and older	9,494	0	100.0%
2015	718	6	99.2%
2016	1,137	45	96.0%
2017	1,920	219	88.6%
2018	1,692	516	69.5%

Disposition of Noncompliance

Number and Percentage of Self-Logged CEs

Since the implementation of the self-logging program in June 2014, the number of self-logged CEs has increased significantly, with most of the increase coming in the last two years. Table A.2 shows that, while the percentage of self-logged CEs dropped slightly below 20 percent of all CEs in 2019, the total number of self-logged CEs in 2019 increased by more than 60 issues over the number of self-logged CEs in 2018, a nearly 40 percent increase, and the highest level of self-logged CEs since implementation of the Self-Logging Program.

Table A.2: Number and Percentage of Self-Logged CEs

Filing Year	Self-Logged CEs	Total CEs	Percentage of Self-Logged CEs
2014	14	113	12.39%
2015	83	514	16.15%
2016	42	479	8.77%
2017	86	939	9.16%
2018	159	771	20.62%
2019	220	1,159	18.98%

Disposition of Noncompliance

Figure A.8 shows the percentage of all noncompliance processed by disposition type in 2019. The ERO Enterprise processed a majority of instances of noncompliance in 2019 as CEs, with less than 20 percent of noncompliance processed by the SNOP or Full NOP disposition methods, both of which can involve a monetary penalty or sanction. Figure A.9 shows the number of noncompliance processed by disposition type over the last few years. Figure A.10 shows the number of noncompliance processed by assessed risk level over the last few years. Finally, Figure A.11 shows the disposition method for all minimal risk noncompliance processed in 2019.

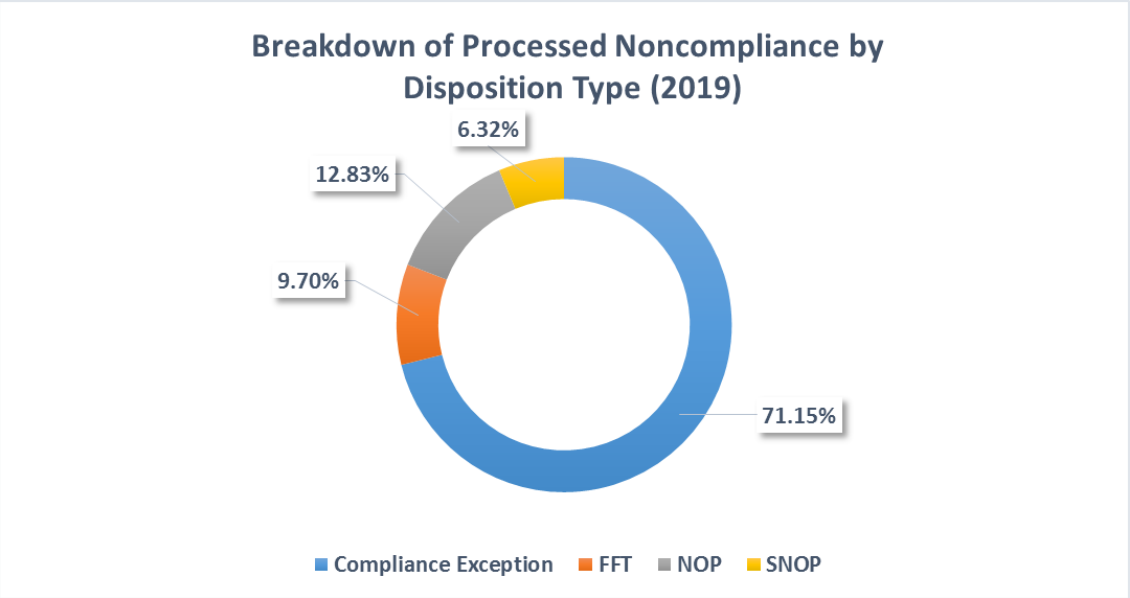


Figure A.8: Disposition Type of Noncompliance Processed in 2019

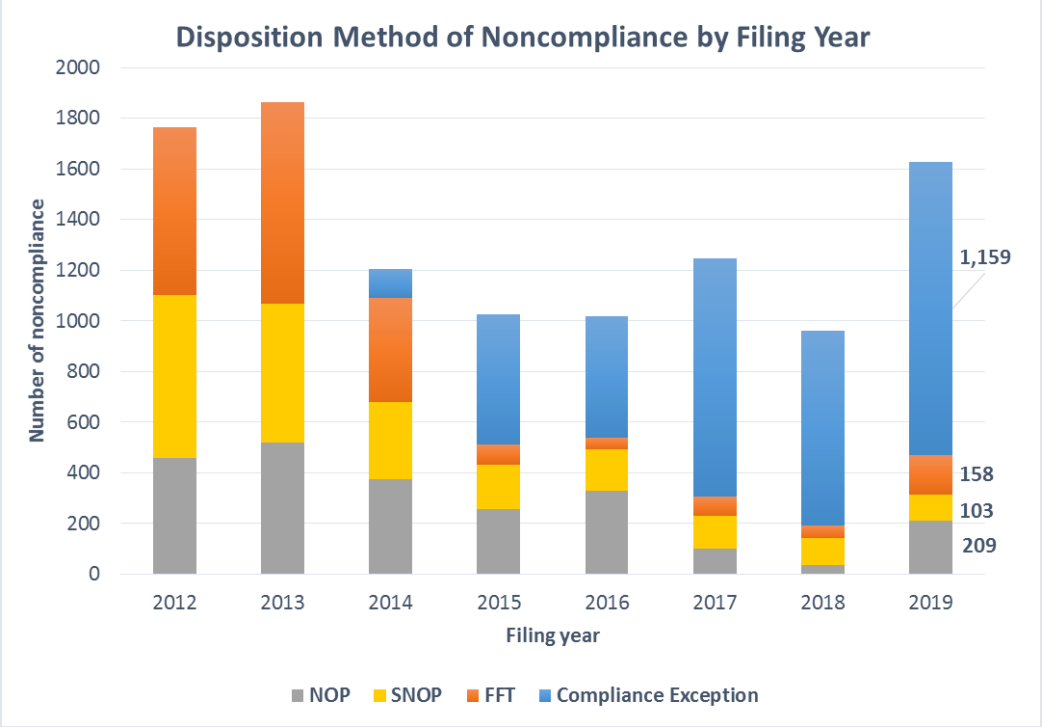


Figure A.9: Disposition Method of Noncompliance by Filing Year

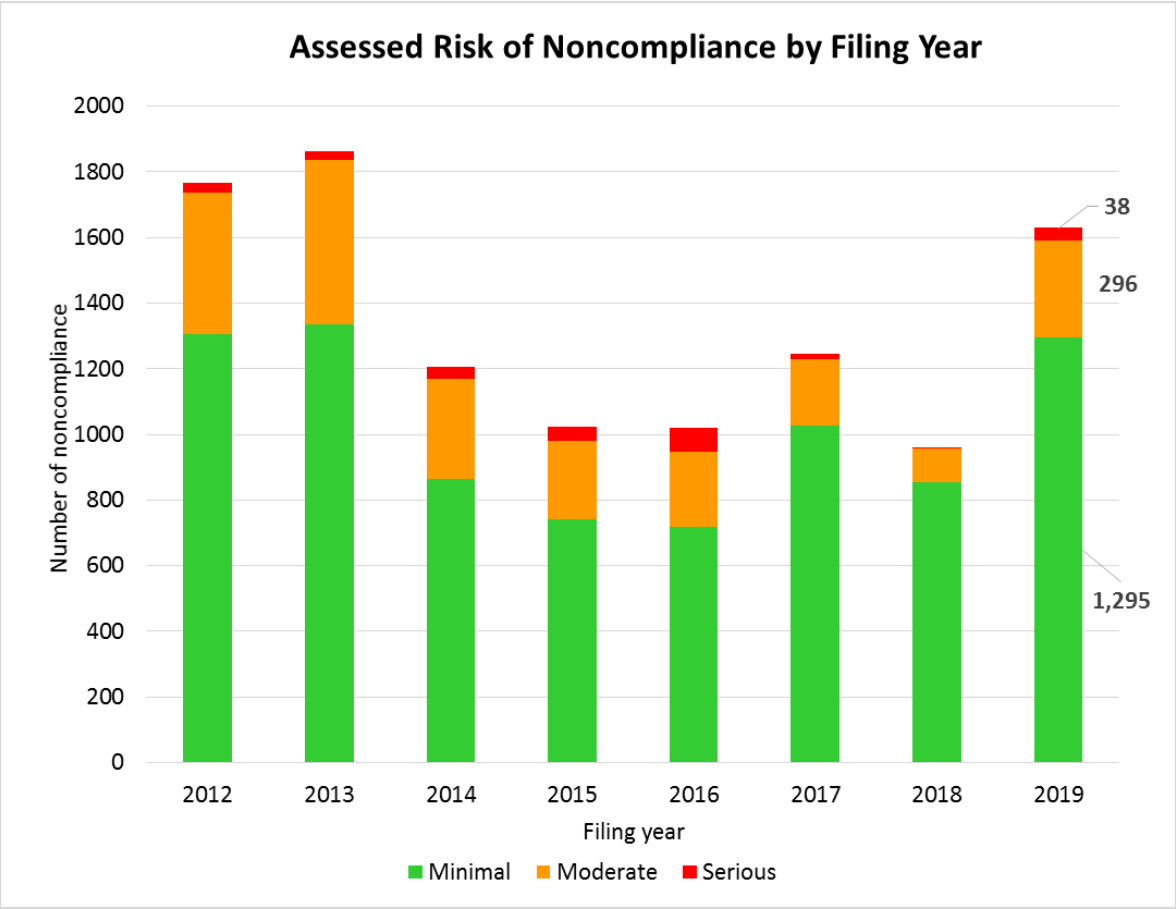


Figure A.10: Assessed Risk of Filed Noncompliance by Filing Year

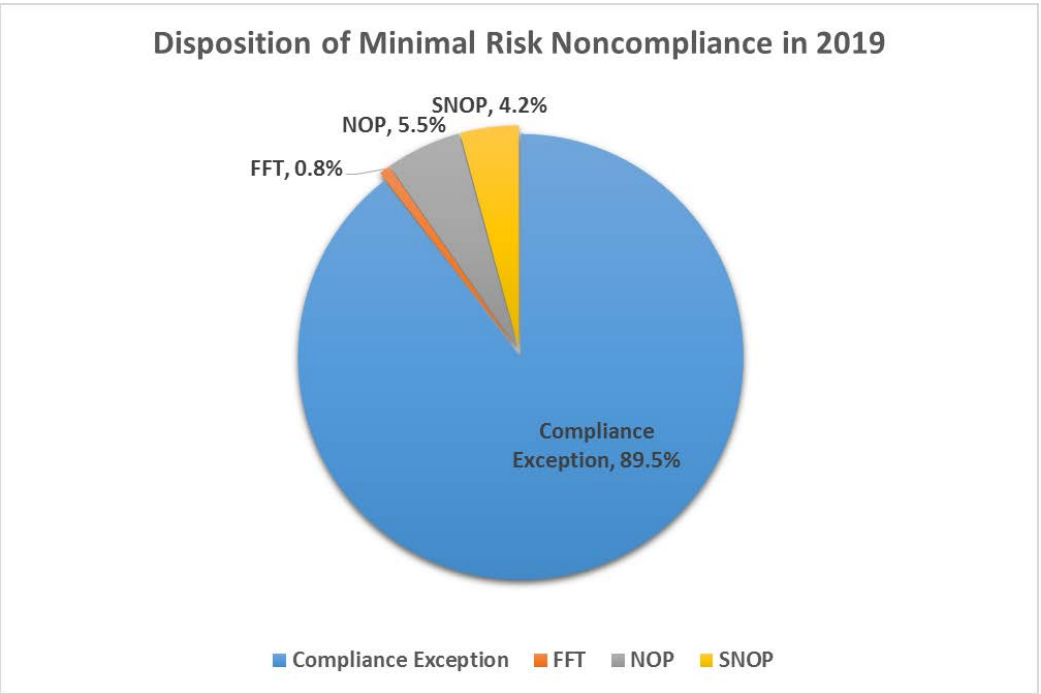


Figure A.11: Minimal Risk Noncompliance Processed in 2019

Risk of Noncompliance

Most Violated Standards by Risk in 2018–2019

CIP-007 was the most frequently violated Reliability Standard in 2018 and 2019, followed by CIP-004 and CIP-010. The vast majority of these noncompliances were disposed of as CEs. CIP-007 was the most frequently violated Reliability Standard for minimal, moderate, and serious risk violations. There were 21 serious risk CIP-007 violations filed in 2018 and 2019 as shown in Figure A.12.

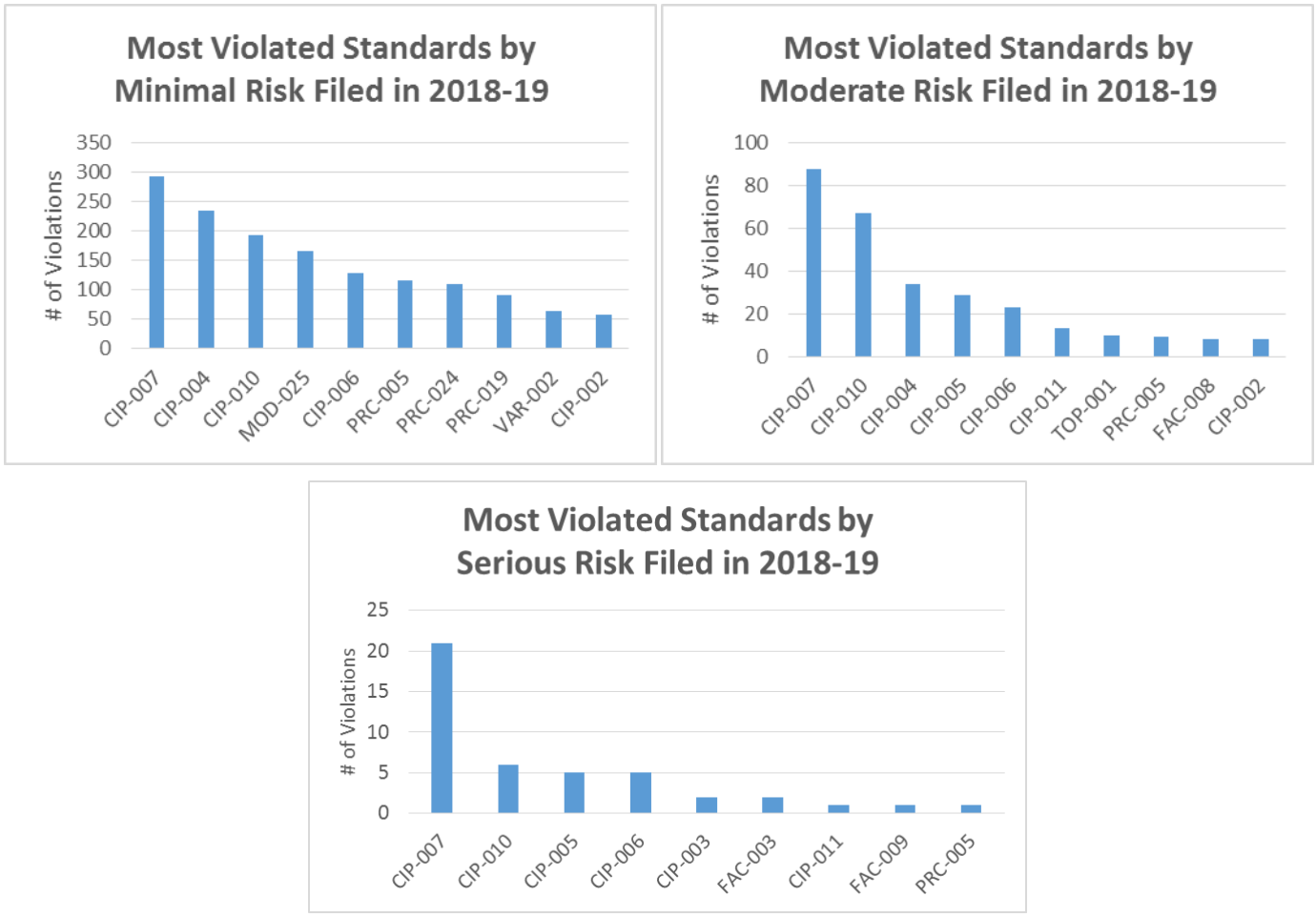


Figure A.12: Most Violated Reliability Standards by Risk Level in 2018–2019

Violations Posing a Serious Risk

Since 2010, NERC has gathered data and regularly monitored violations posing serious risk to the reliability of the BPS. In 2019, the ERO Enterprise saw an increase in the number of serious risk violations that were filed with FERC, but these 38 serious risk violations represented approximately 2.5 percent of all filed noncompliance. The vast majority of these serious risk violations were in CIP Standards, particularly those relating to Electronic Security Perimeters and interactive remote access, ports and services, security patches, account management, and baselines. The serious risk non-CIP violations involved vegetation management and Facility Ratings.

Serious Risk Averages

Figures A.13, A.14, and A.15 show the percentage of serious risk violations over a rolling three-year average. The percentages are determined based on the number of serious risk violations compared to the total number of noncompliance filed in a given three-year period. In prior years, NERC Enforcement has had a target of keeping the percentage of serious risk violations for each period below five percent. Figure A.13 shows all serious risk violations,

both CIP and non-CIP. Figure A.14 includes all non-CIP serious risk violations. Figure A.15 shows all serious risk CIP violations. All three graphs show that the percentage of serious risk violations remained well below the five percent ceiling in the 2017-2019 period.

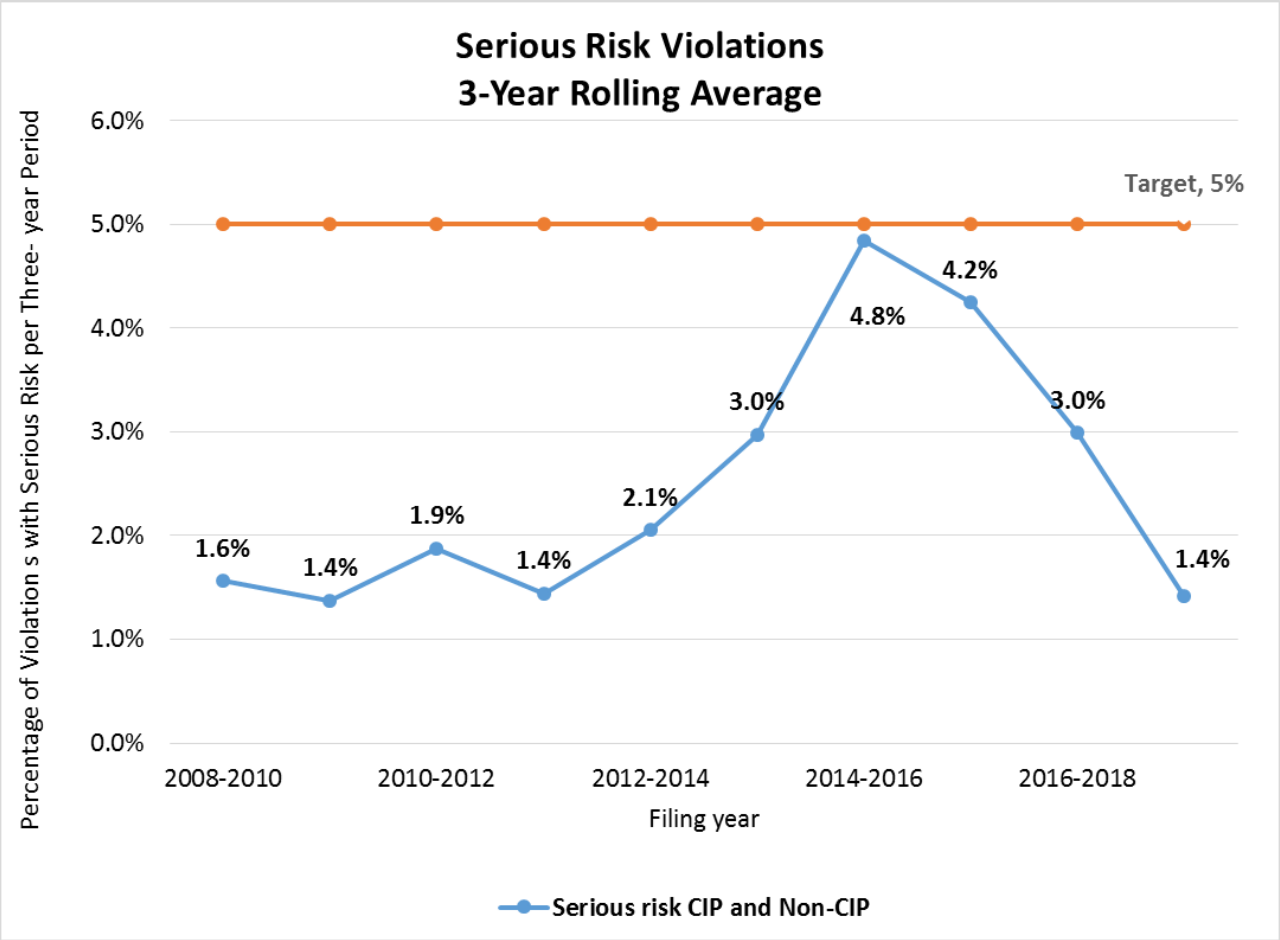


Figure A.13: Serious Risk Violations (CIP and non-CIP)

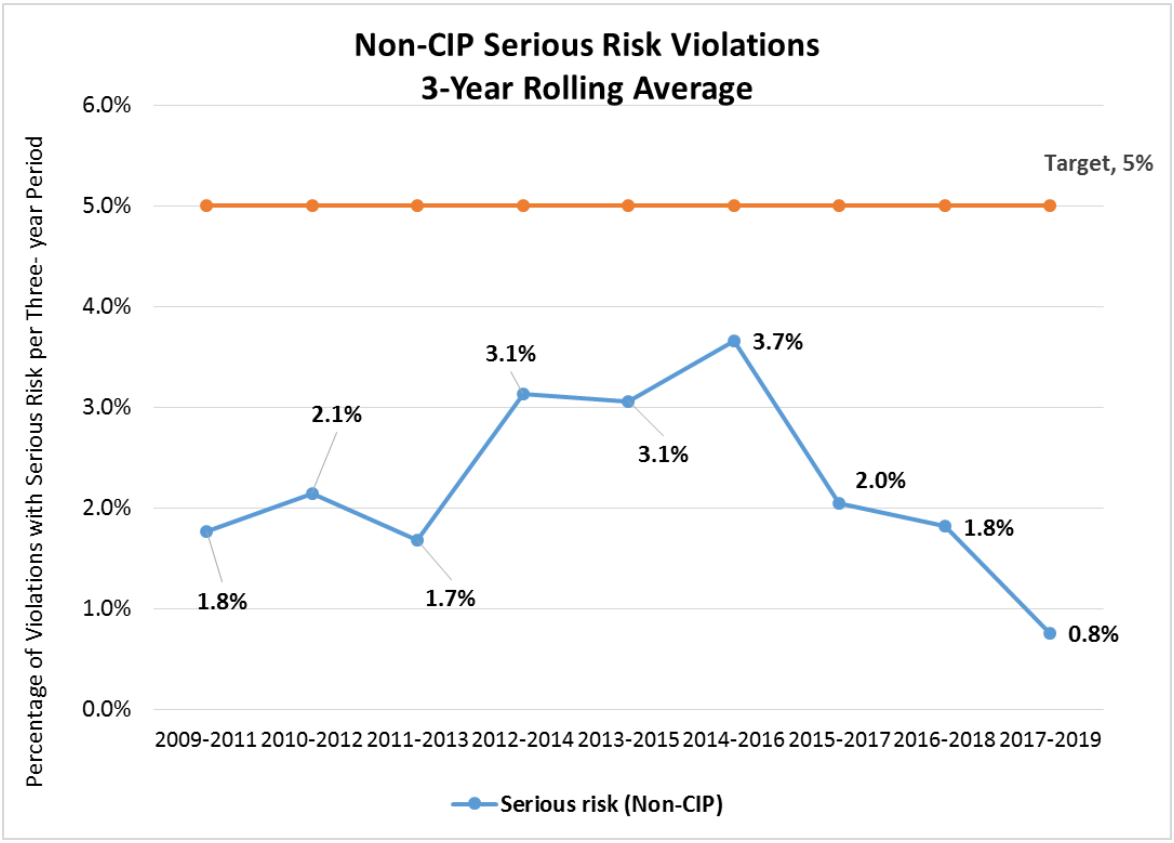


Figure A.14: Non-CIP Serious Risk Violations

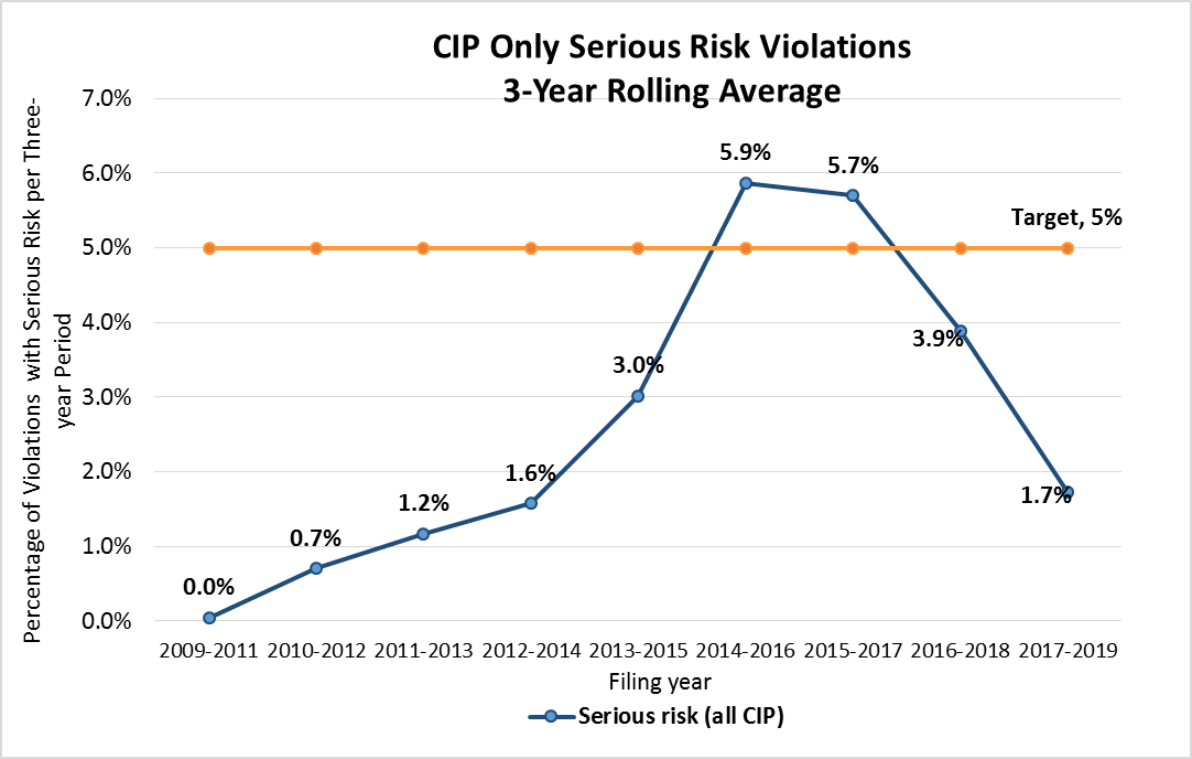


Figure A.15: CIP Only Serious Risk Violations

Increased Repeat Moderate and Serious Risk Violations

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

Figure A.16 compares three categories of moderate and serious risk noncompliance: noncompliance with compliance history (blue columns), noncompliance with compliance history involving similar conduct (orange line), and all filed moderate and serious risk noncompliance (gray line). Noncompliance with similar conduct is a subset of the wider group of repeat noncompliance, in which the entity's current noncompliance looks to involve similar conduct or a similar cause to 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 total moderate and serious noncompliance, shown by the gray line, includes both "new" noncompliance and repeat noncompliance.

The total number of moderate and serious risk violations with similar prior conduct rose in 2019, which was expected given the unusually low number of issues in 2018. Previous years had four to five times as many moderate and serious risk noncompliance with similar prior conduct and two to three times as many moderate and serious risk issues overall. Several of the Full NOPs filed in 2019 involved violations with similar prior conduct, which resulted in larger penalty amounts.

NERC expects some level of noncompliance with similar underlying conduct to persist and will continue to monitor this metric in 2020 as a way to measure the effectiveness of mitigation. Figure A.17 shows the same information as in Figure A.16, but averaged over a three-year period. This figure shows that, even with the spike in 2019 moderate and serious risk violations filed, the general trend over the last few years has been toward fewer moderate and serious risk violations filed, fewer moderate and serious risk violations with relevant compliance history, and fewer moderate and serious risk violations with aggravating compliance history.

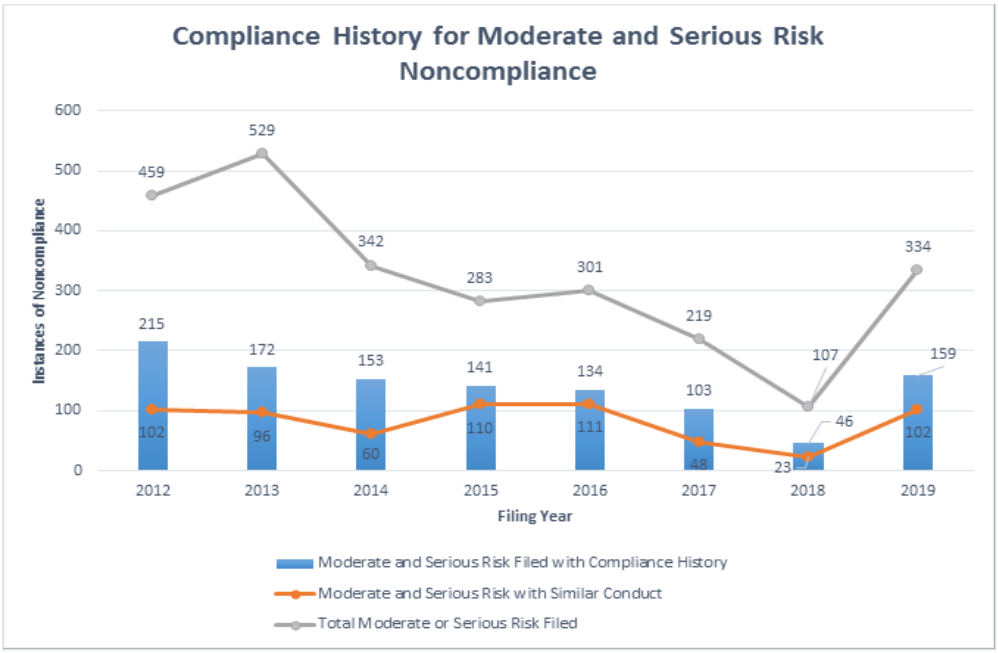


Figure A.16: Compliance History and Similar Conduct for Moderate and Serious Risk Violations

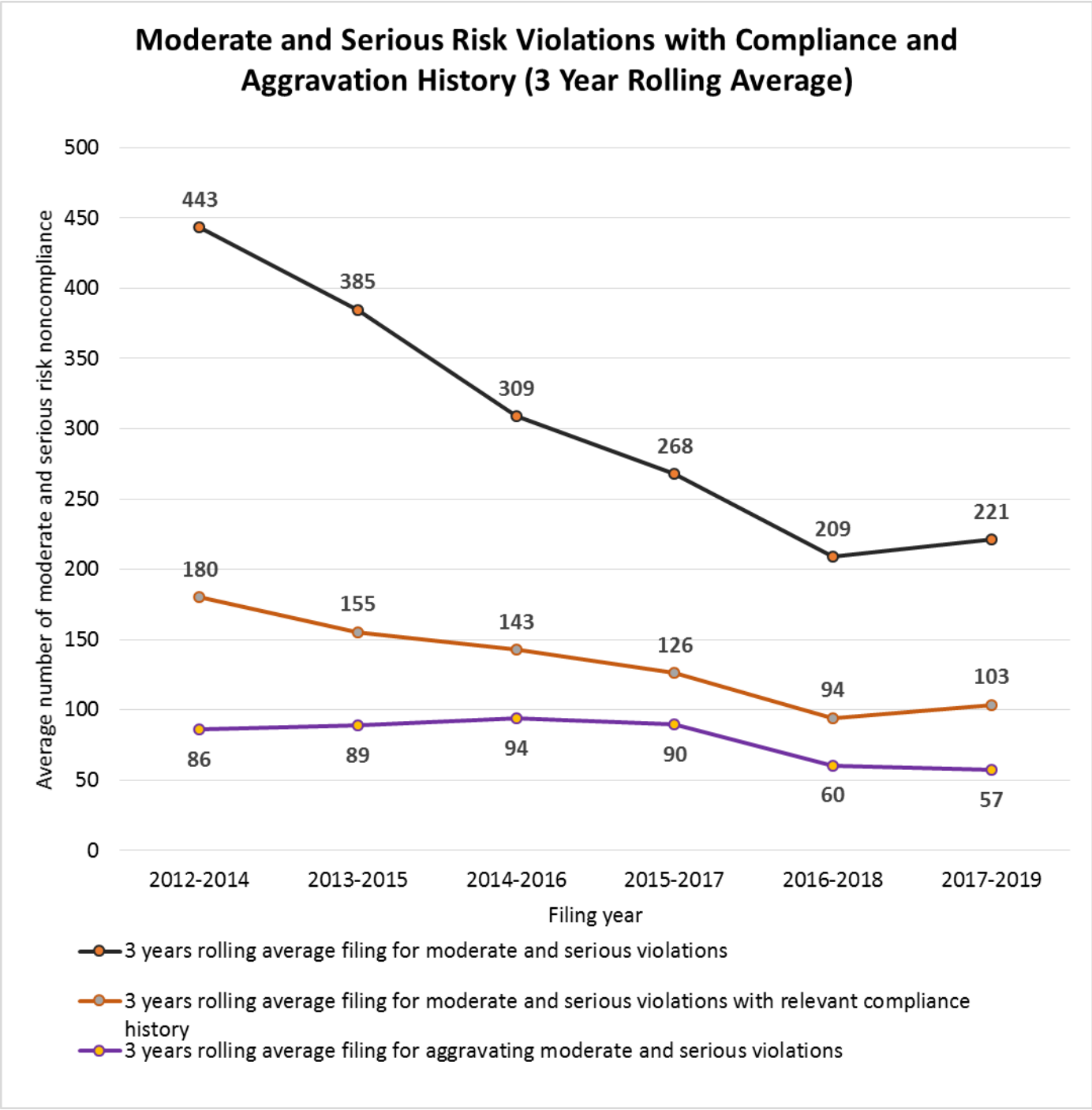


Figure A.17: Compliance History and Similar Conduct for Moderate and Serious Risk Violations (3-year Rolling Average)

Vegetation Management

NERC regularly reports on two items related to vegetation management. First, NERC tracks all sustained outages caused by vegetation contacts submitted to REs on a quarterly basis. Those are displayed in Figure A.18 below. Second, NERC tracks transmission outages resulting from possible violations of FAC-003. These are usually submitted to REs through Self-Reports. Not all sustained outages caused by vegetation contacts are possible violations of FAC-003; however, some outages may fall into both tracking items. Historically, vegetation-related issues that were both FAC-003 violations and resulted in sustained outages have been Category 1B outages.

The majority of vegetation-related sustained outages result from vegetation falling into transmission lines from outside the right-of-way. Fall-ins are shown as Category 3 outages below. There were four Category 3 outages in Q1 2019, fifteen in Q2, and two in Q3 2019.[23] There were no Category 1B outages reported in Q1-Q3 2019. Category 1B outages occur when vegetation grows into transmission lines from within the right-of-way, resulting in a sustained outage. Registered entities reported these outages through Periodic Data Submittals on a quarterly basis. Due to the timing of these reports, the number of vegetation-related sustained outages reported so far in 2019 does not reflect Q4 2019 submissions.

NERC filed one Full NOP resolving a violation of FAC-003 R2 in 2019. This violation had been reported in 2018. The ERO Enterprise is currently reviewing six possible violations of FAC-003 involving encroachments into the MCVD, some of which resulted in transmission outages, which represents an increase over the previous three-year period.

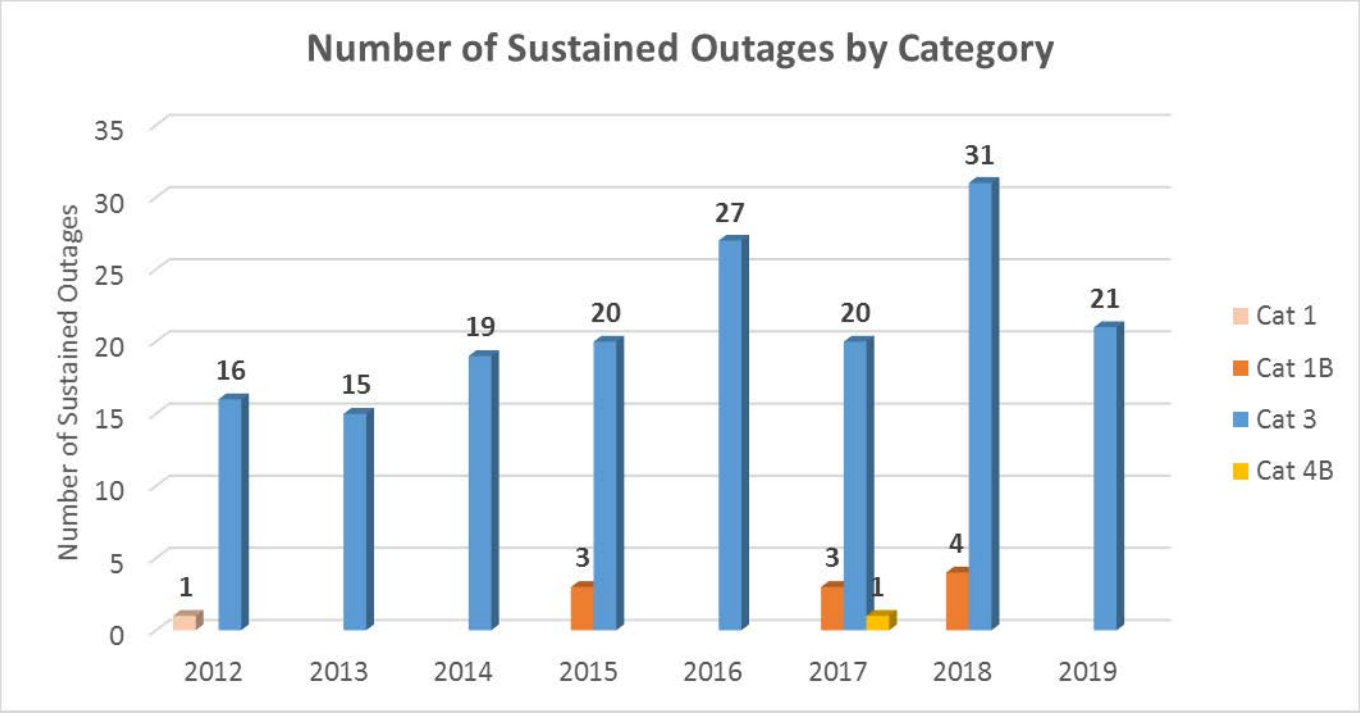


Figure A.18: Vegetation-Related Outages by Category

[23] Vegetation-related outage information is consolidated on a delayed quarterly basis. Information related to Q4 2019 will be available in Q1 2020.

Appendix B: Compliance Assurance

Coordinated Oversight Program for MRREs

Figure B.1 represents the distribution of the 51 MRRE groups (comprising 218 separate registered entities) by Lead RE, and Figure B.2 represents the distribution of MRREs by registered function. The registered entities that opted to join the program include various reliability functions in multiple REs.

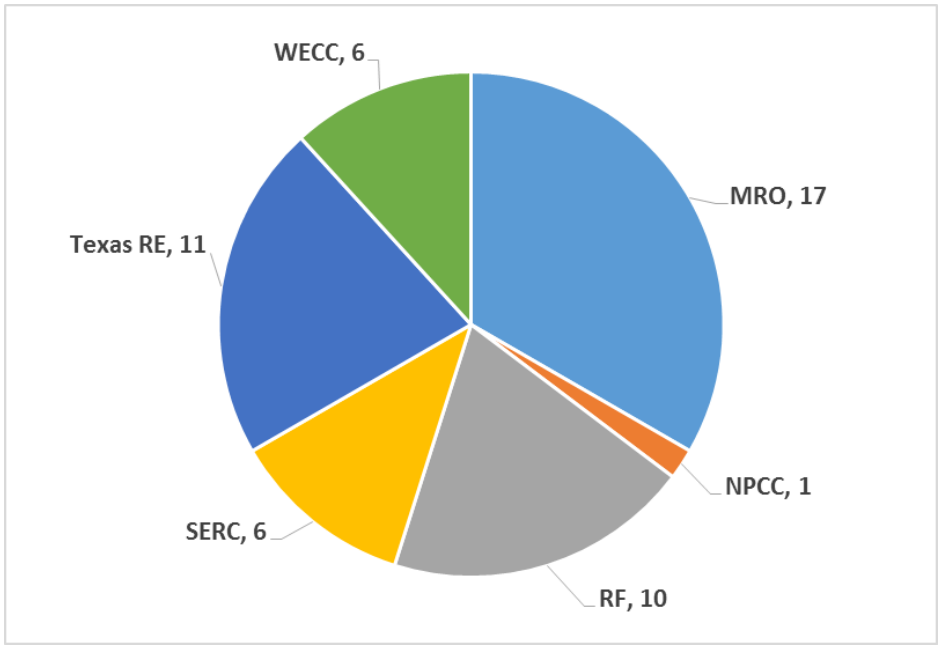


Figure B.1: Distribution of MRREs under Coordinated Oversight by Lead RE

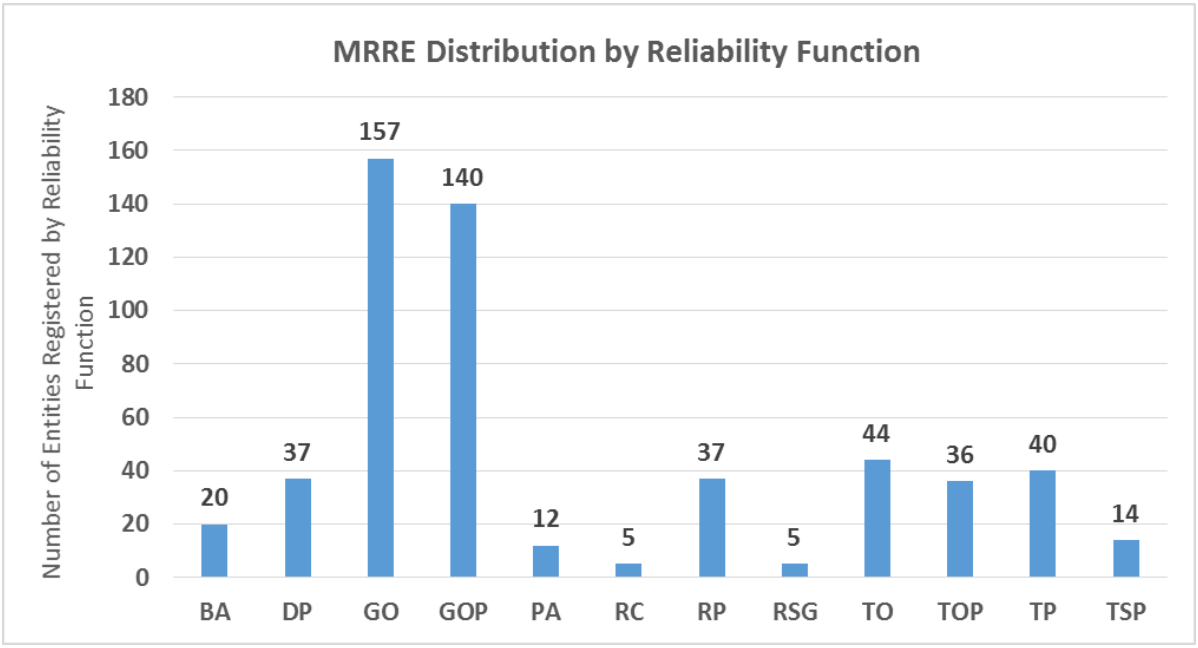


Figure B.2: Coordinated Oversight Distribution by Registered Function[24]

[24] Each bar represents the number of registered entities by function in the Coordinated Oversight Program for MRREs.

ERO Enterprise Completion of Initial IRAs

Figure B.3 identifies the number of IRAs completed by each RE. As of the end of 2019, the REs have completed 1,396 IRAs for 1,536 registered entities.[25] The ERO Enterprise completed IRAs for approximately 91 percent of the total number of registered entities.[26] All REs have completed IRAs for all entities registered as RCs, BAs, and TOPs, with the exception of one small TOP identified by its RE as low-risk. The RE will complete the IRA for this TOP before conducting the TOP's next audit. NERC and the REs anticipate registration changes that will affect overall IRA completion for registered entities. As such, IRA activity prioritization will consider registered functions and registration changes to ensure IRAs are completed.

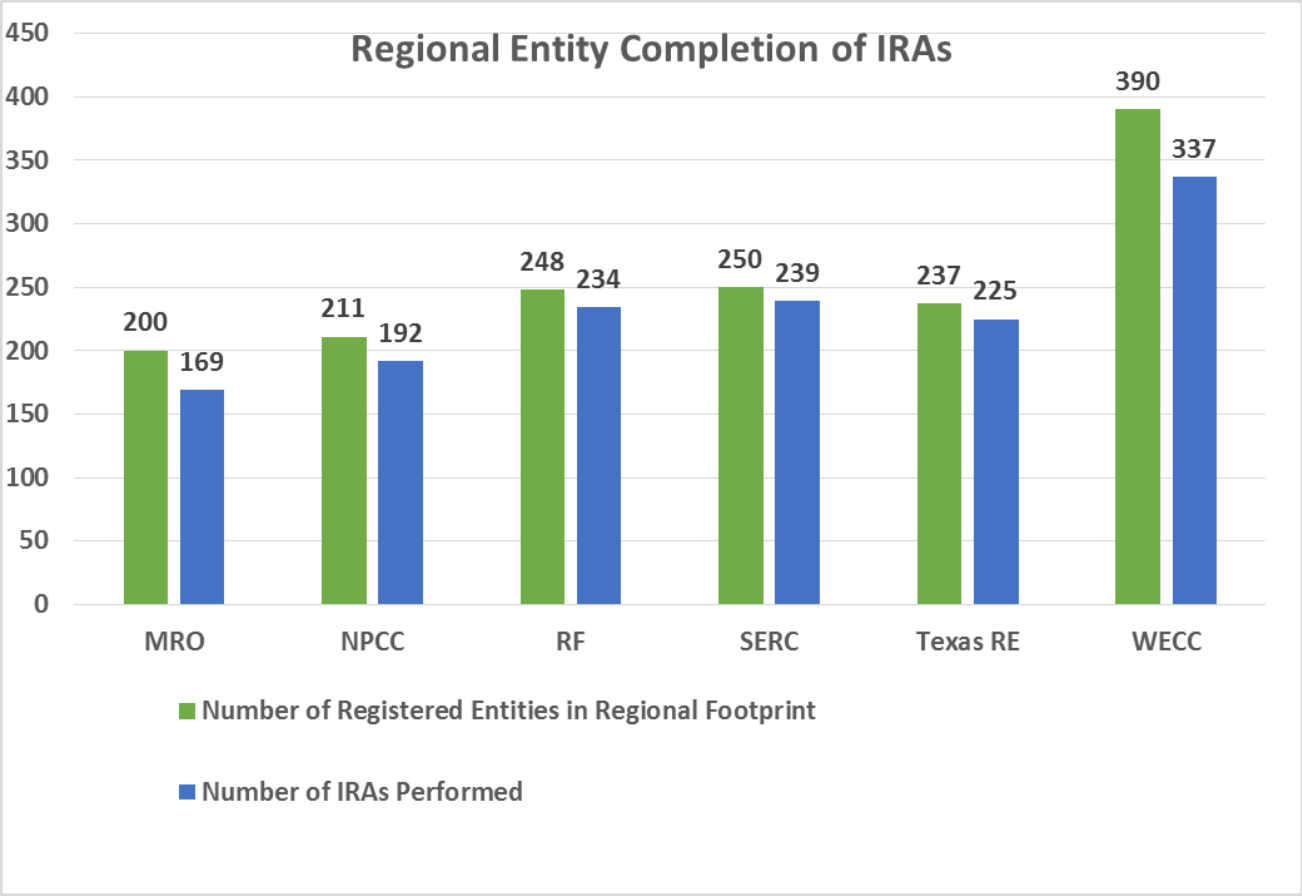


Figure B.3: RE Completion of IRAs

[25] NERC bases the number of registered entities on the registration cut-off date of December 14, 2019, which includes all newly registered entities. NERC does not include deregistered entities.

[26] Some of the registered entities are MRREs in the Coordinated Oversight Program. As such, until the Lead RE completes the IRA for that MRRE group, the numbers do not update for the Affected REs. Therefore, some of the REs included in Figure B.3 do not receive credit until their IRAs are completed.

Appendix C: Registration

Registration Change Activity by Function

Figure C.1 and Table C.1 depict 2019 registration change activity by RE. Figure C.2 and Table C.2 depict 2019 registration change activity by function. Registration activity in 2019 saw net decreases in functional registrations in FRCC RE and NPCC and net increases in functional registrations in all other REs and the ERO Enterprise as a whole. Registration activity in 2019 also saw net decreases in registrations for Distribution Providers (DPs), Transmission Owners (TOs), and TOPs, and net increases in registrations for Generator Owners (GOs) and Generator Operators (GOPs).

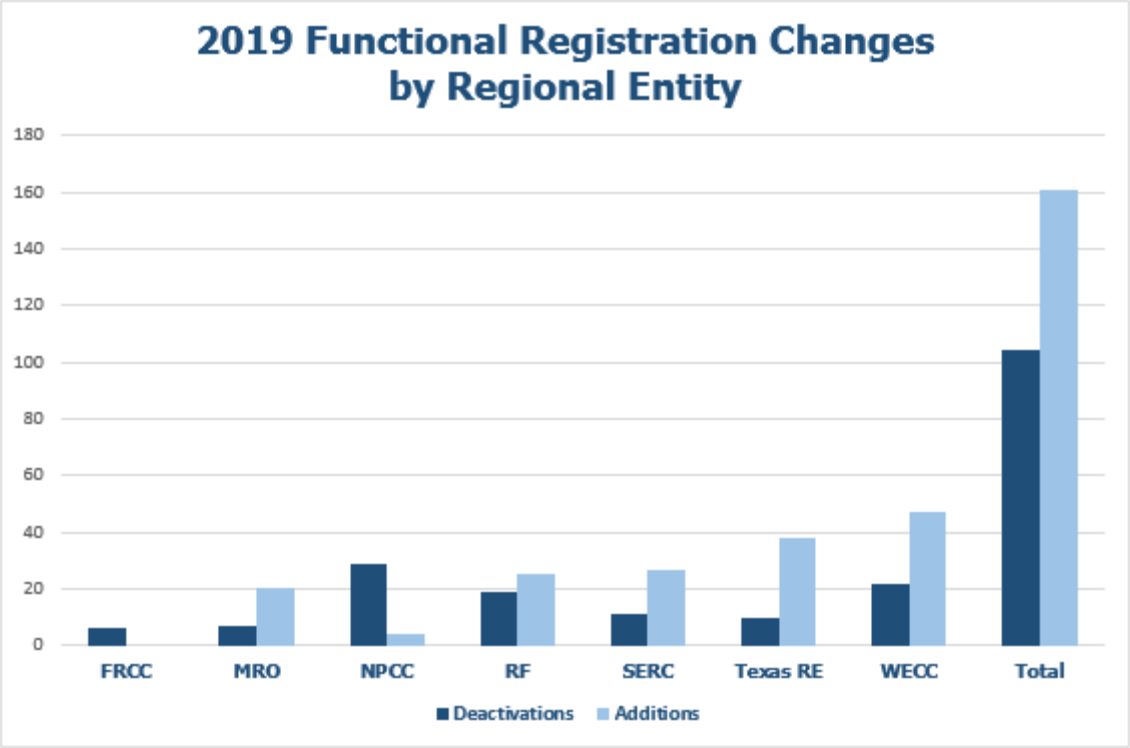


Figure C.1: Functional Registration Change Activity by RE and Total 2019 Changes

Table C.1: Functional Registration Change Activity by RE and Total 2019 Changes								
	FRCC	MRO	NPCC	RF	SERC	Texas RE	WECC	TOTAL
Deactivations	6	7	29	19	11	10	22	104
Additions	0	20	4	25	27	38	47	161

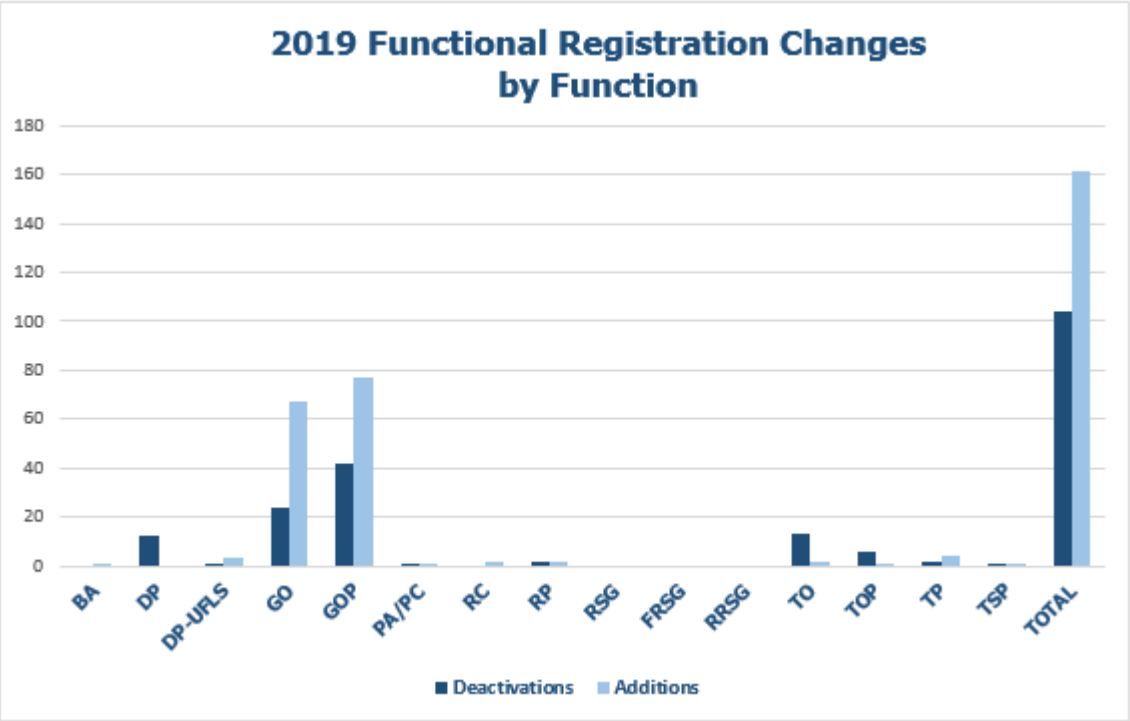


Figure C.2: 2019 Registration Change Activity by Function

Table C.2: 2019 Registration Change Activity by Function													
	BA	DP	DP-UFLS	GO	GOP	PA/PC	RC	RP	TO	TOP	TP	TSP	TOTAL
Deactivations	0	12	1	24	42	1	0	2	13	6	2	1	104
Additions	1	0	3	67	77	1	2	2	2	1	4	1	161

Table C.3 shows the basis for 2019 registration changes. NERC seeks justification from each RE when approving registration change activity.

Table C.3: 2019 Registration Change Basis	
Compliance responsibility assumed by another Registered Entity	32
Consolidated to another mutually-owned Registered Entity	25
Facility Shutdown	16
Determined to not meet registration criteria	15
Sold to another Registered Entity	12
Determined to meet criteria as DP-UFLS Only and registered as such	3
NERC-Led panel deactivation	1

Appendix D: Certification and BES

ERO Enterprise Organization Certification Utilization

Certification activities are responsive to the number of new entities requiring certification and the types of changes implemented to already-certified and operational entities. Program utilization metrics help to plan resource needs, including staff, travel, and training.

Figure D.1 identifies the number of new entity certifications completed by each RE during 2019 and the number of new entity certifications where an onsite visit has been performed but the certification activity has not yet been concluded (in process). Figure D.2 identifies the number of reviews of changes to already-certified and operational entities completed by each RE during 2019 and the number of certification reviews in process at the end of 2019. All certification activity for FRCC RE transitioned to SERC on July 1, 2019.

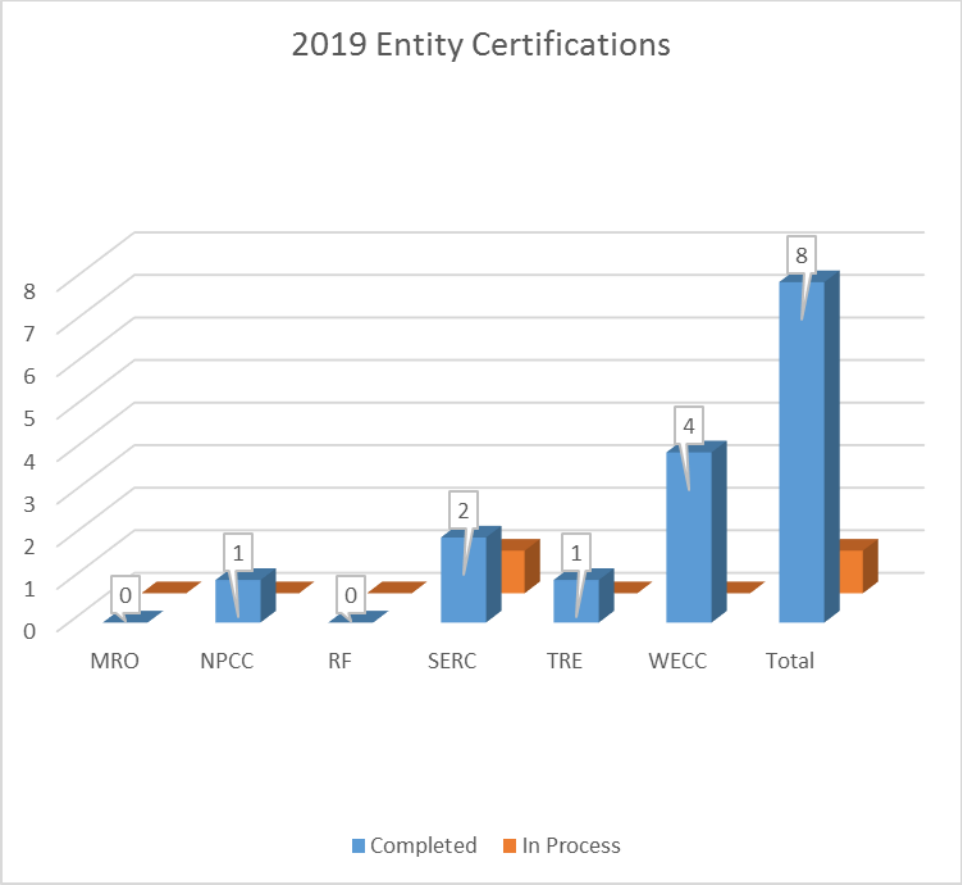


Figure D.1: 2019 New Entity Certifications by RE

Table D.1: 2019 Organization Certification		
Function	**Completed**	**In Process**
Reliability Coordinator	3	0
Transmission Operator	3	0
Balancing Authority	2	1

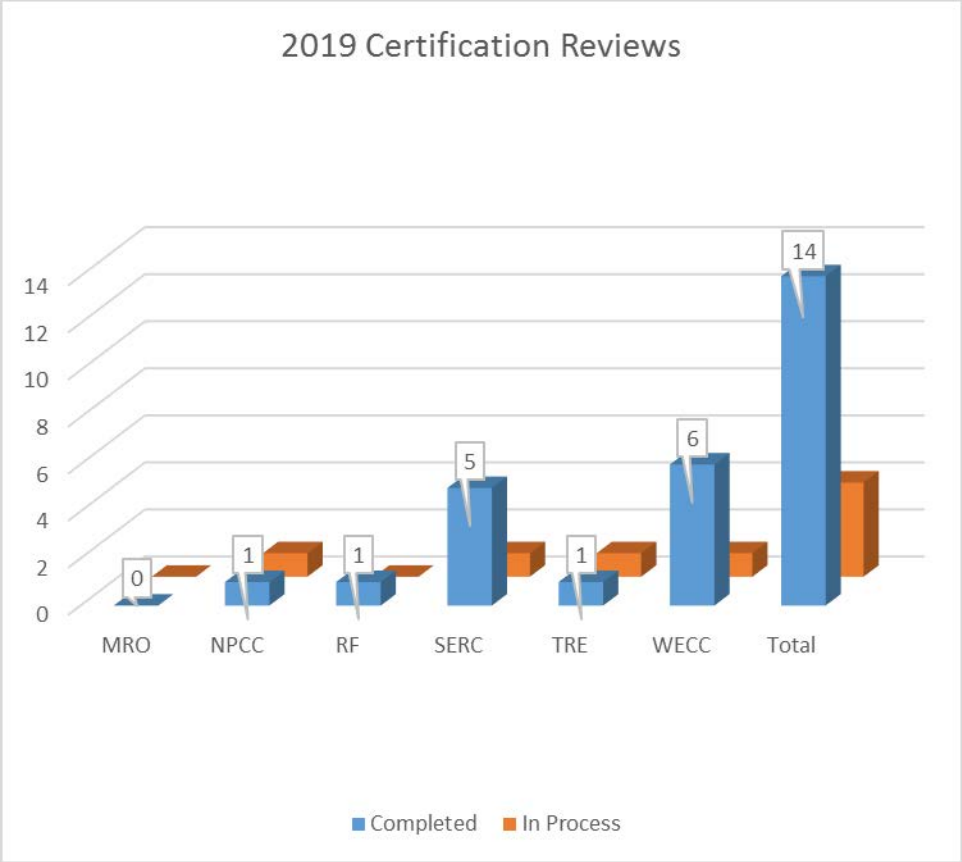


Figure D.2: 2019 Certification Review Activity by RE

Table D.2: 2019 Certification Review		
Change Basis	**Completed**	**In Process**
Changes to a Registered Entity's Footprint	4	0
Relocation of the Control Center	7	2
Changes to Supervisory Control and Data Acquisition (SCADA)/Energy Management System (EMS) System	3	2

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Compliance Monitoring and Enforcement Program Annual Report

Ed Kichline, Senior Counsel and Director of Enforcement Oversight
Steven Noess, Director of Regulatory Programs
Compliance Committee Meeting
February 5, 2020

RELIABILITY | RESILIENCE | SECURITY

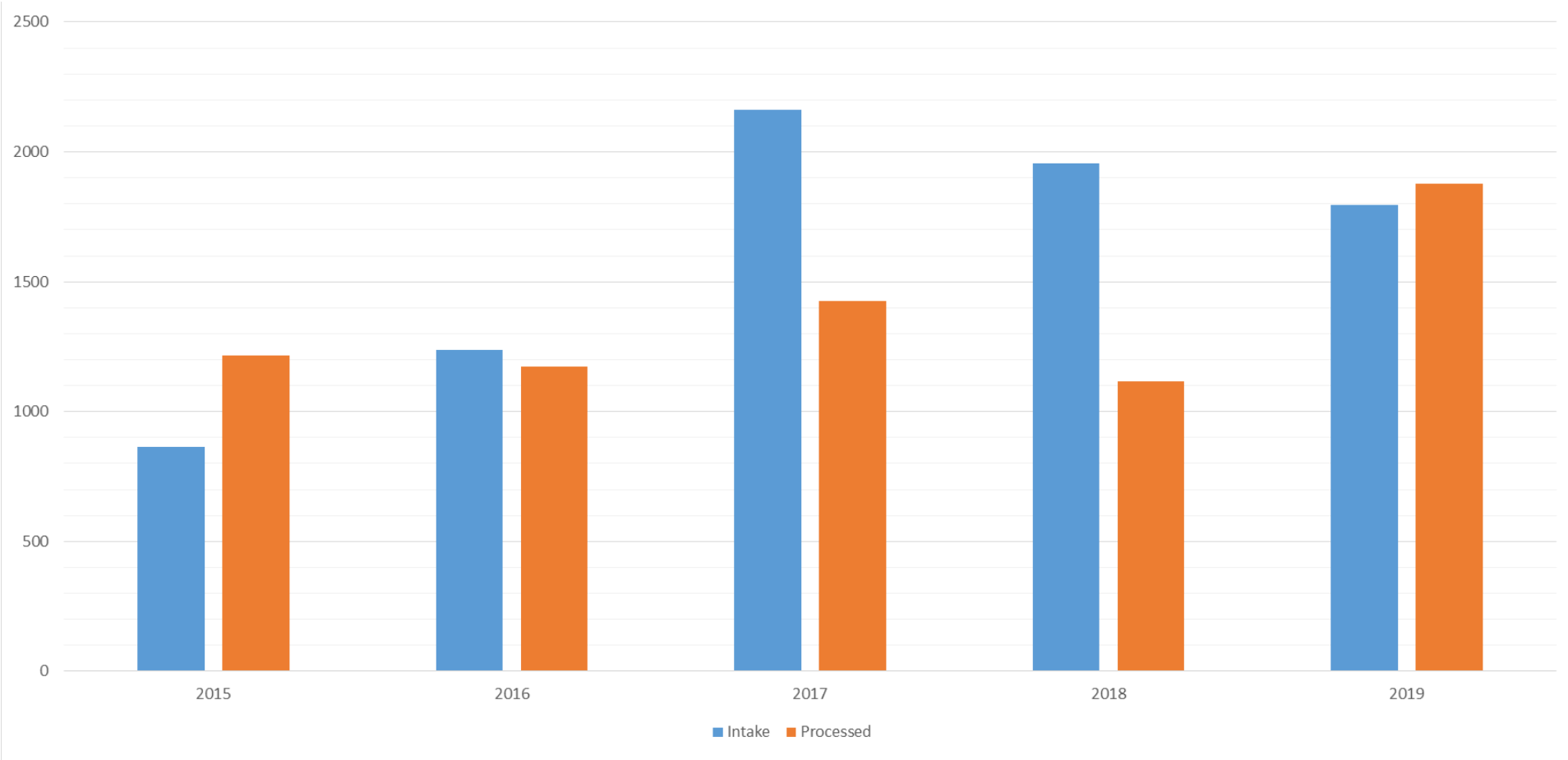



Enforcement Metrics

- Enforcement metrics include violation aging and mitigation completion
- 14% of ERO Enterprise caseload was greater than two years old at end of year
  - Down from 20% at the end of Q3
- Comprehensive picture of incoming violations and violation processing
- Details on the oldest violations and associated mitigation

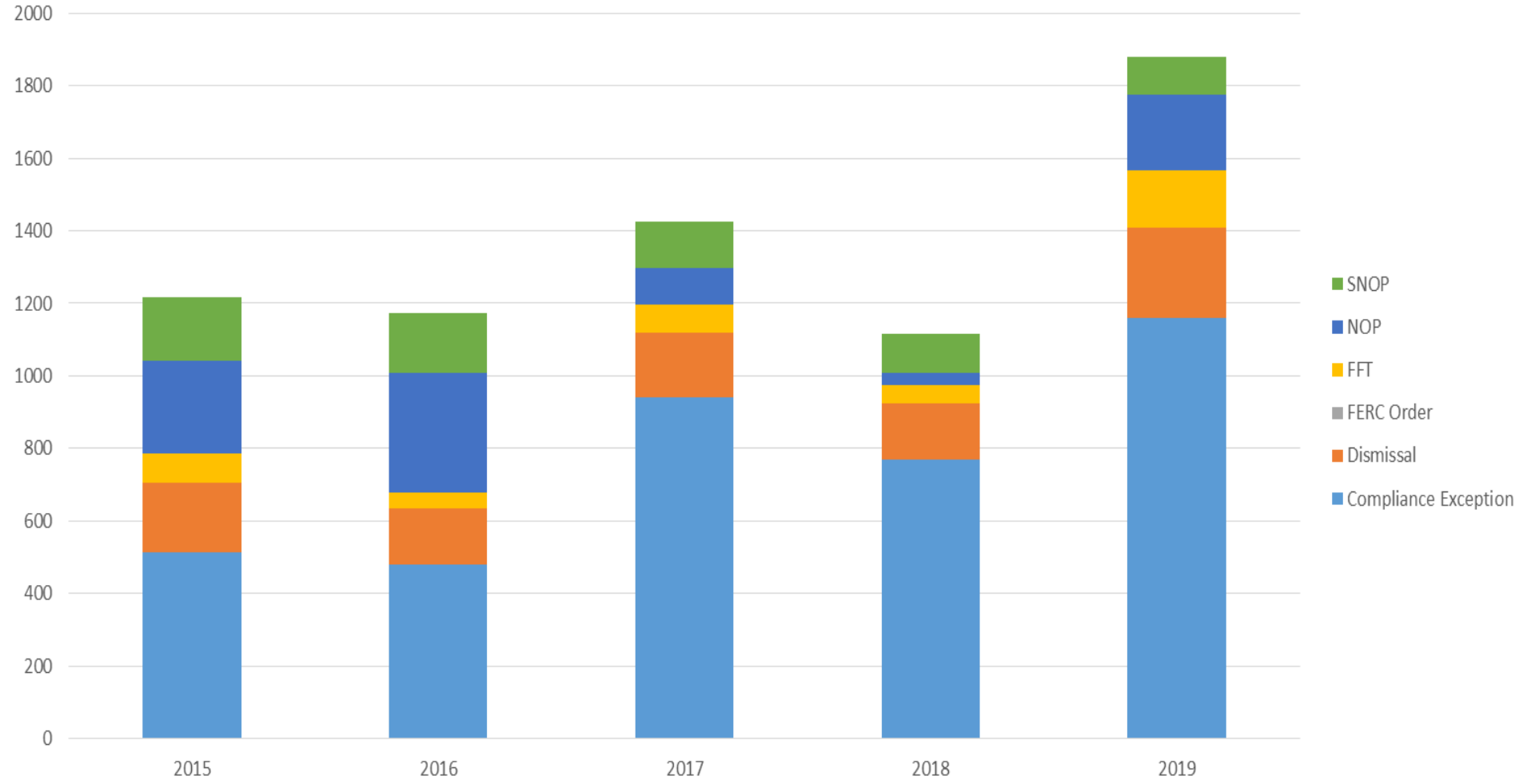
New Violations and Violation Processing

Fewer Reported Violations and Increased Processing in 2019



Productivity in Resolving Violations

More Resolved Noncompliance Across all Levels of Risk in 2019



Balanced Approach to Handling Caseload

- Dealing with increase in noncompliance with new Reliability Standards
  - PRC and MOD Standards, especially for variable generation resources
  - CIP Version 5 applicable to more entities and more assets
- Resolving lower risk noncompliance while working on higher risk violations
- Focusing on timely mitigation for all noncompliance
- Ensuring comprehensive mitigation for highly technical CIP violations

Violations Over Two Years Old

- 352 violations over two years old
  - 64 registered entities
- 25 violations over two years old with ongoing mitigation
  - 12 registered entities
  - 4 of the 25 violations currently assessed as serious risk
    - 2 registered entities
- Over 90% have completed mitigation
  - Mitigation completion as measure of reduced risk
- Over 80% are CIP violations
  - Greater complexity with new technologies and CIP Version 5

What the ERO Enterprise is Doing

- Ongoing engagement with registered entities
  - Understanding extent of violations and assisting the design of robust controls to prevent recurrence
- Sharing lessons learned and mitigation best practices
  - Effective solutions to the most common causes of violations
  - Outreach on new Reliability Standards and preventive controls to reduce the number of violations
- Streamlining efforts
  - Efficient risk assessment and resolution for all noncompliance

What to Expect in 2020

- CIP Notices of Penalty
  - Resolving the oldest, more complex violations
- Vegetation Management Notices of Penalty
  - Growth into the Minimum Vegetation Clearance Distance, sometimes leading to a contact
- Facility Ratings Notices of Penalty
  - Many resulting from registered entity reviews of equipment and facilities

Coordination and Focus on Facility Ratings

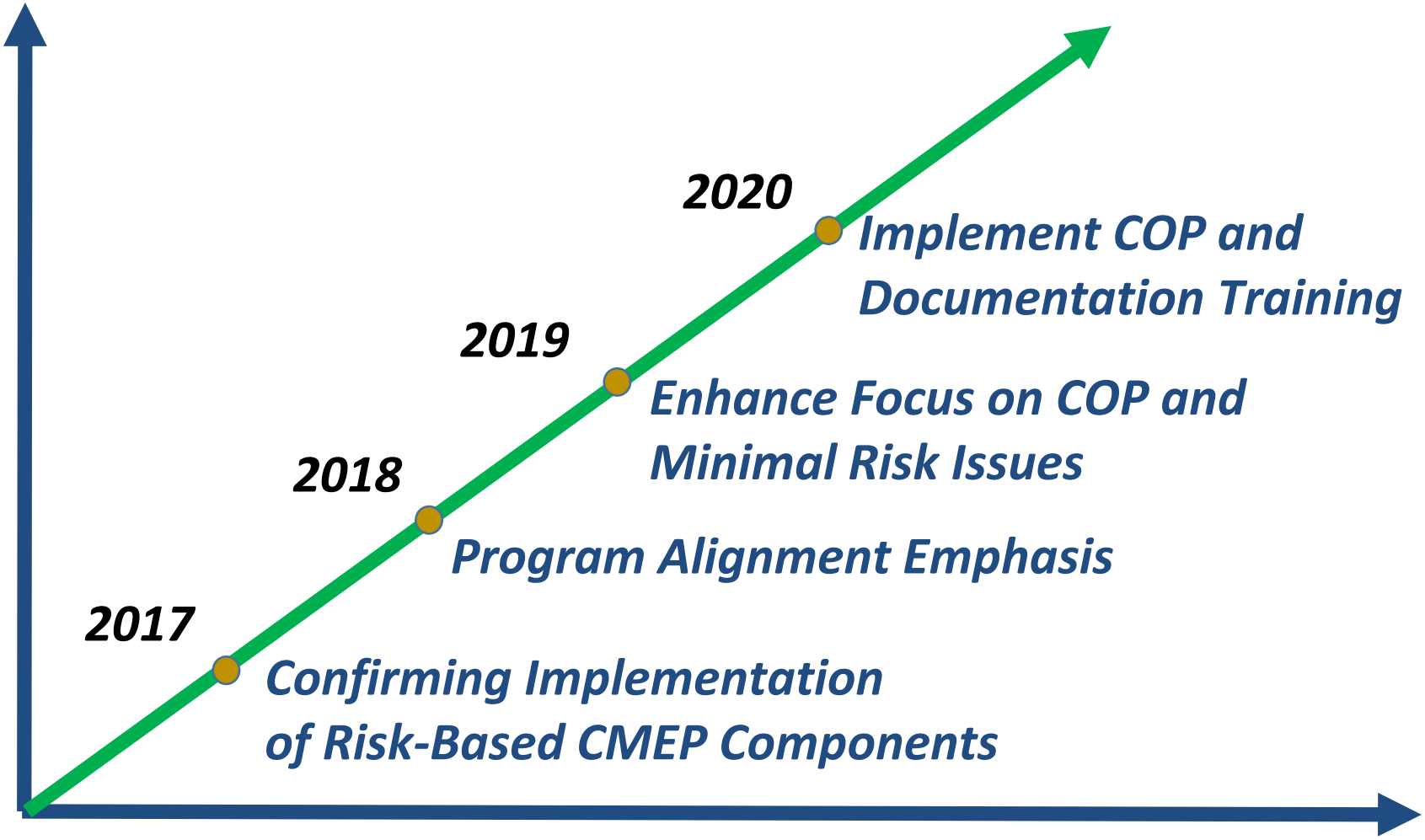
- CMEP activities indicate widespread discrepancies
  - Documented Facility Ratings versus actual field conditions
  - Many are significant, causing increased risk to bulk power system reliability
  - Performance correlation between strong entity controls and proactive field validation
- ERO Enterprise and NATF have coordinated
  - Avoid duplication
  - Ensure common understanding of issue and share best practices
- ERO Enterprise developing CMEP Practice Guide (expected release by Q2 2020)
- Emphasis on training for CMEP staff and outreach for industry
- 2020 CMEP Implementation Plan

Gaps in Program Execution

- 2020 Risk Element
  - Where records are not kept up to date, inaccurate models and damaged equipment can result. Failing to keep accurate inventories of responsibilities and equipment following asset transfers, addition of new equipment, or mergers and acquisitions, is causing incomplete entity programs in Facility Ratings and vegetation management.

Standards	Requirements	Rationale
CIP-002-5.1a	R1, R2	Ensuring entities maintain complex programs which handle large amounts of data, e.g., accurate inventories of equipment, following asset transfers, addition of new equipment, etc.
CIP-010-2 (-3 eff 7/1/2020)	R1	
FAC-003-4	R1, R2, R3, R6, R7	
FAC-008-3	R6	
PRC-005-6	R3	

Oversight Progression



Compliance Oversight Plan

Enhanced Analysis

Targeted Oversight

Prioritized Monitoring

Single Report

Compliance Oversight Plan

- Tailors compliance monitoring activities based on entity-specific factors
- Oversight strategy for a registered entity
- Provide comparative assessments to shape oversight planning and resource allocation of ERO Enterprise staff
- Emphasis on understanding internal controls and other performance considerations
- Shared with the registered entity

Inputs – Quantitative and Qualitative Data

Enhanced Analysis

Inherent risk assessment – quantitative entity data such as what you own or operate

Performance assessment – qualitative entity data such as internal controls, culture of compliance, compliance history, event data

Targeted Oversight

- Will communicate the Regional Entity's current understanding of an inherent risk and performance profile
- Will include selected Risk Categories for monitoring

Targeted Oversight

Provides considerations for an entity's continuous improvement

Provides focus for Regional Entity for its compliance monitoring activities

Risk Categories

- Asset/System Identification
- Entity Coordination
- Identity Management and Access Control
- Emergency Operations Planning
- Operating During Emergencies/Backup and Recovery
- Training
- Asset/System Management and Maintenance
- Asset/System Physical Protection
- Long-term Studies/Assessments
- Operational Studies/Assessments
- Modeling Data
- System Protection
- Normal System Operations

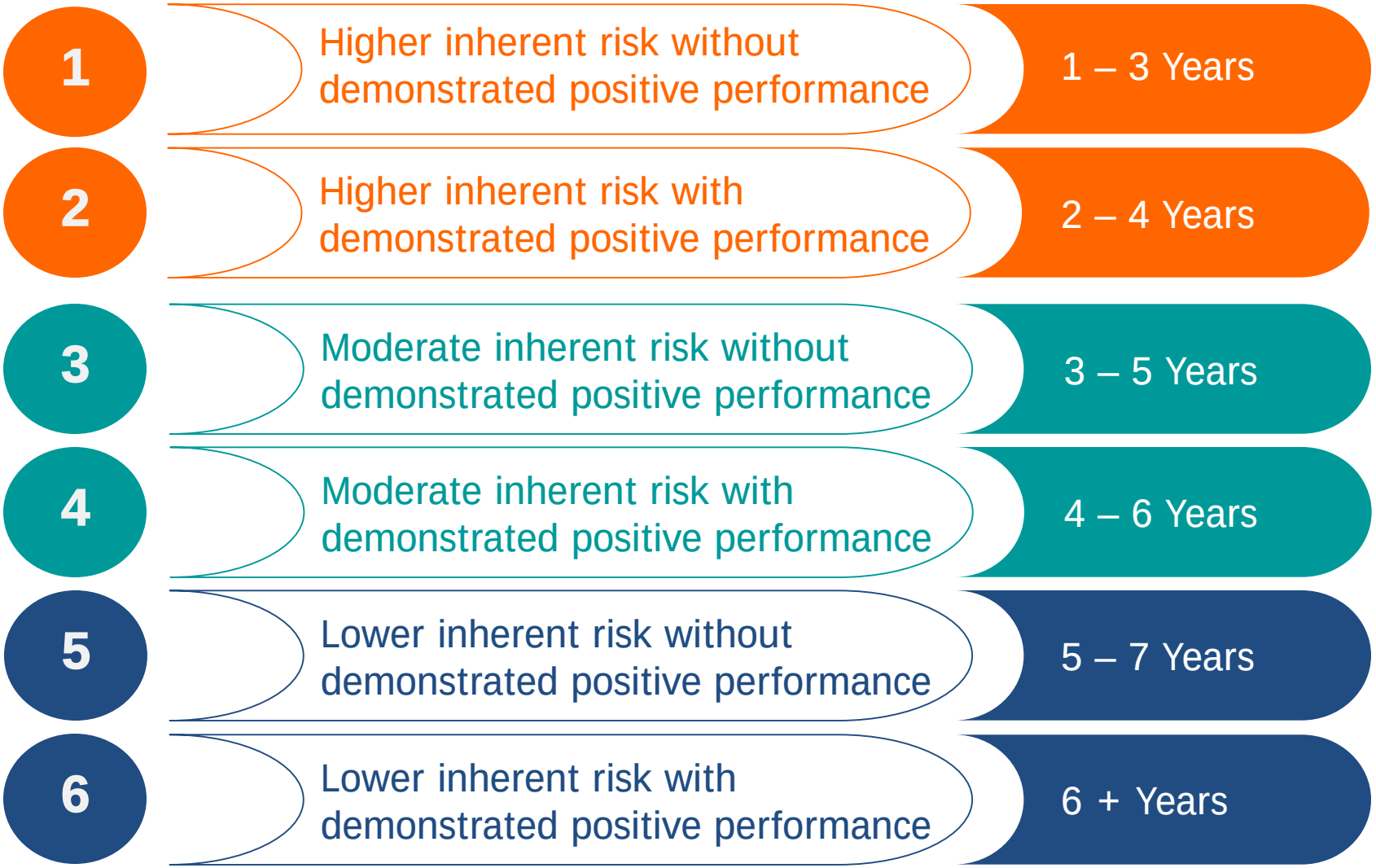
Prioritized Monitoring

- Will include a target monitoring frequency selected based on inherent risk and performance profile

Prioritized Monitoring

Identifies target interval for oversight, primary monitoring tools, and informs annual planning

Prioritized Monitoring



Performance Impact

- Establish target intervals for engagements based off of inherent risk and performance profile

Category 1

The target monitoring interval for a higher risk entity without demonstrated positive performance is once every 1 – 3 years.

A Regional Entity will use one or a combination of the following CMEP Tools:

- Audit (on or off-site)
- Self-Certifications
- Spot Check

Category 2

The target monitoring interval for a higher risk entity with demonstrated positive performance is once every 2 – 4 years.

A Regional Entity will use one or a combination of the following CMEP Tools:

- Audit (on or off-site)
- Self-Certifications
- Spot Check

Contents of the COP Report

Single Report

1. Purpose

2. Analysis and Results

3. Oversight Strategy

App. A: IRA Results Summary

App. B: Standards and Requirements for Monitoring

Workflow Documentation and Work Paper Enhancements

- ERO Enterprise CMEP Business Practice Enhancements
  - Re-evaluate access/possession/retention of entity documents and data
  - Separating CMEP planning, business workflow, and work papers versus evidence location
  - Proactive and disciplined destruction policy
  - Clarify workflow and work paper documentation expectations
- Focus of CMEP staff training in 2020
  - April CMEP staff workshop
  - Emphasized during oversight
- Outreach and training for industry during rollout

Questions and Answers