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

Q2 2021

August 10, 2021

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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 North Americans 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/Operators participate in another.
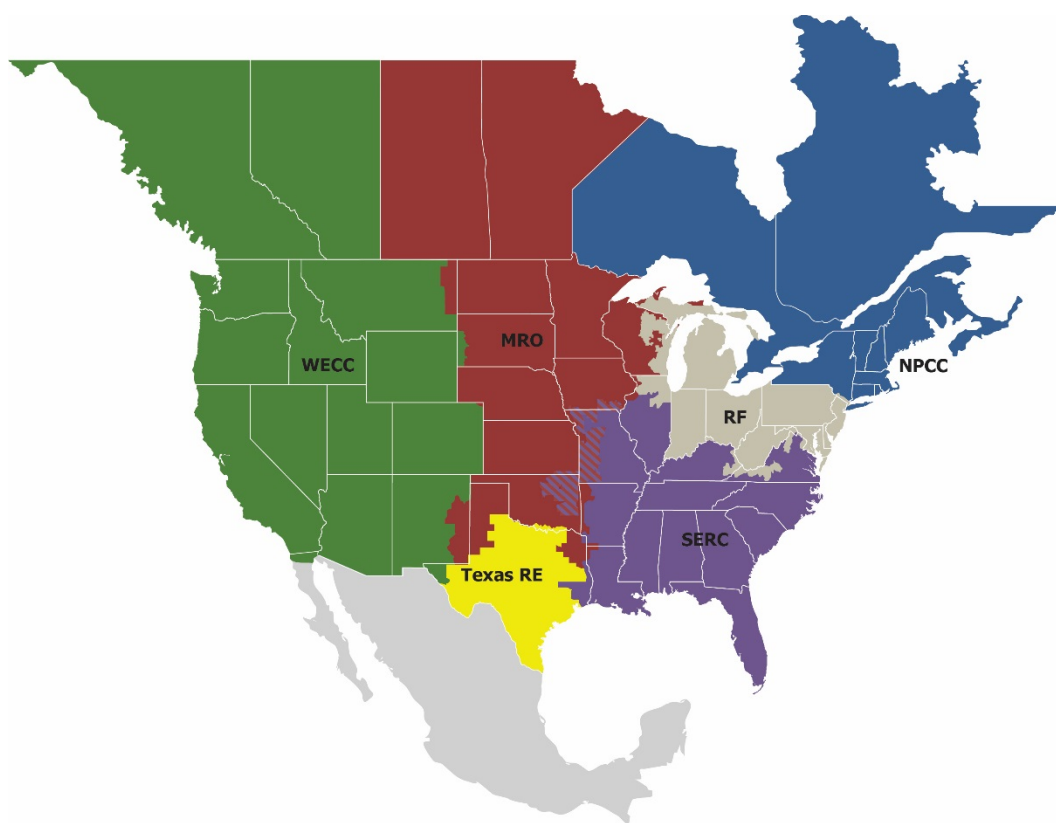
MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	Western Electricity Coordinating Council

Executive Summary

This report highlights key ERO Enterprise[1] Compliance Monitoring and Enforcement Program (CMEP) and Organization Registration and Certification Program (ORCP) activities that occurred in Q2 2021 and provides information and statistics regarding those activities.

In Q2 2021, CMEP and ORCP activities throughout the ERO Enterprise reflected continued implementation of a risk-based approach and program alignment. The ERO Enterprise:

- Continued working with the Federal Energy Regulatory Commission (FERC or Commission) and Canadian provincial authorities to provide regulatory discretion to industry during the novel coronavirus (COVID-19) pandemic and extended the temporary expansion of the Self-Logging Program to address minimal and moderate risk potential noncompliance related to registered entities' coronavirus response efforts and the deferment of on-site activities to December 31, 2021;

- Went live with Release 1 of Align and the Secure Evidence Locker with all regions. Release 2 is scheduled for release on July 19, 2021, with a phased rollout of adoption of functionality based on regional schedules.

- Began providing lessons learned to industry for Critical Infrastructure Protection (CIP) Reliability Standard noncompliance after implementing a process in 2020 for filing and submittal of CIP noncompliance information to the Commission. NERC requests that FERC treat the entire filing or submittal as Critical Energy/Electric Infrastructure Information (CEII) and does not publicly post redacted CIP noncompliance information;

- Filed eleven Full Notices of Penalty (Full NOPs) and five Spreadsheet Notices of Penalty (SNOPs);

- Monitored RE implementation of Compliance Oversight Plans (COPs) for their registered entities; and

- Processed 74 registration changes.

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[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

Coordination between FERC, NERC, and Regional Entities on Potential Coronavirus Impacts

> On March 18, 2020, FERC and NERC announced steps to ensure that operators of the bulk electric system could focus their resources on keeping people safe and the lights on during the unprecedented public health emergency posed by the COVID-19 pandemic.

The announcement stated that FERC and NERC were using regulatory discretion to advise all registered entities that they would consider the impact of the coronavirus outbreak in complying with certain Reliability Standards, that REs would postpone on-site audits, certifications, and other on-site activities until at least July 31, 2020, and that FERC and NERC would continue to evaluate the situation.[2]

On April 2, 2020, NERC began posting frequently asked questions that NERC and the REs had received from industry regarding the joint NERC-FERC guidance for COVID-19.[3]

On May 28, 2020, the ERO Enterprise released new guidance temporarily expanding the Self-Logging Program to allow all registered entities to self-log instances of potential noncompliance with minimal or moderate risk related to their coronavirus response.[4] While registered entities remain responsible for maintaining compliance with NERC Reliability Standards, this expansion allows them to focus their immediate efforts and resources on maintaining the safety of their workforce and communities to ensure the reliability of the bulk power system during this public health emergency. Under this temporary expansion of the Self-Logging Program, potential noncompliance related to coronavirus impacts logged consistently with this guidance is expected to be resolved without further action.[5]

The ERO Enterprise extended the temporary expansion of the Self-Logging Program and deferment of on-site activities several times in 2020 and 2021.[6] The latest extension moves the expiration date of this temporary expansion of the Self-Logging Program and the deferment of on-site activities to December 31, 2021, and the ERO Enterprise anticipates that this will be the final extension of this guidance.[7]

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[2] Joint FERC and NERC Press Release, FERC, *NERC Provide Industry Guidance to Ensure Grid Reliability Amid Potential Coronavirus Impacts* (March 18, 2020), available at https://www.nerc.com/news/Headlines%20DL/FERC%20NERC%20031820%20final.pdf.

[3] *COVID-19 ORC and CMEP Frequently Asked Questions*, available at https://www.nerc.com/pa/comp/CAOneStopShop/COVID19_ORC_CMEP%20FAQs_Posted.xlsx.

[4] NERC Press Release, *ERO Enterprise Releases New Guidance Temporarily Expanding Self-Logging Program Due to Coronavirus Impacts* (May 28, 2020), available at https://www.nerc.com/news/Pages/ERO-Enterprise-Releases-New-Guidance-Temporarily-Expanding-Self-Logging-Program-Due-to-Coronavirus-Impacts.aspx.

[5] *ERO Enterprise Guidance: Potential Noncompliance Related to Coronavirus Impacts*, available at https://www.nerc.com/pa/comp/CAOneStopShop/ERO%20Enterprise%20Guidance%20Potential%20Noncompliance%20Related%20to%20Coronavirus%20Impacts.pdf.

[6] NERC Press Release, *ERO Enterprise Extends Self-Logging Program Expansion and Deferment of On-Site Activities* (August 13, 2020), available at https://www.nerc.com/news/Pages/ERO-Enterprise-Extends-Self-Logging-Program-Expansion-and-Deferment-of-On-Site-Activities.aspx; and NERC Press Release, *ERO Enterprise Further Extends Self-Logging Program Expansion and Deferment of On-Site Activities* (October 27, 2020), available at https://www.nerc.com/news/Pages/ERO-Enterprise-Further-Extends-Self-Logging-Program-Expansion-and-Deferment-of-On-Site-Activities.aspx; NERC Press Release, *ERO Enterprise Further Extends Self-Logging Program Expansion and Deferment of On-Site Activities through Mid-2021*, available at https://www.nerc.com/news/Pages/ERO-Enterprise-Further-Extends-Self-Logging-Program-Expansion-and-Deferment-of-On-Site-Activities-Through-Mid-2021.aspx. .

[7] NERC Press Release, *ERO Enterprise Issues Extension of Self-Logging Program Expansion and Deferment of On-Site Activities through Mid-2021*, available at https://www.nerc.com/news/Pages/ERO-Enterprise-Issues-Extension-of-Self-Logging-Program-Expansion-and-Deferment-of-On-Site-Activities.aspx.

NERC and the REs continue to monitor the COVID-19 pandemic and will work with registered entities, the Commission, applicable governmental authorities in Canada, and other partners to ensure the reliability and security of the grid.

Compliance Monitoring During Pandemic Conditions

> The ERO Enterprise continues to perform compliance monitoring engagements off-site using video and audio conference technologies.

The ERO Enterprise scopes the compliance monitoring engagements using a risk-based framework and conducts Subject Matter Expert (SME) interviews via web conferences and/or telephone communications. For cases where the ERO Enterprise typically conducts in-person observation or walk-through assessments, compliance monitoring staff are determining whether further analysis is required when the pandemic conditions no longer exist or if the registered entity provided sufficient evidence during the off-site review for reasonable assurance of compliance. For instances where the ERO Enterprise identifies high-risk areas that cannot be sufficiently reviewed off-site, the ERO Enterprise will schedule additional compliance monitoring engagements for the registered entity later in 2021 or 2022, as conditions permit.

Certification Engagements During Pandemic Conditions

> The ERO Enterprise continues to perform certification engagements (certifications and certification reviews) off-site, or "virtually on-site," using video and audio conference technologies.

The ERO Enterprise scopes the certification engagements to evaluate an entity's Reliability Coordinator, Balancing Authority, and Transmission Operator capabilities using a risk-based approach. Engagements include tours (walk-through assessments) of control center facilities, Energy Management System (EMS) functionality demonstrations, and interviews with key entity O&P and CIP personnel. Discussions during certification engagements are more focused which requires managing subject matter expert attendance and there has been an increase in the formality of documenting considerations. The ERO Enterprise continues to emphasize flexibility in schedule and the control of technology. The successful use of the available technology has prompted consideration for continued use of this approach, when pandemic conditions no longer exist, for engagements with entities that pose a lower risk or are located in remote areas where travel constraints may be an issue.

Align Project and ERO Secure Evidence Locker

On May 24, 2021, the Align tool and the ERO Secure Evidence Locker (ERO SEL) went live with Release 1 with NPCC, ReliabilityFirst, and SERC. The project improves and standardizes CMEP processes across the ERO Enterprise, enhances ERO Enterprise operations, and improves the effectiveness of executing statutory functions.

Release 2, consisting of Periodic Data Submittals, Technical Feasibility Exceptions, and Self Certifications, is scheduled for July 19, 2021, with a phased rollout of adoption of functionality across the REs to be complete by Q4 2021.

Work has begun on Release 3, covering core compliance auditing and scheduling. The Align Steering Committee agreed to separate enhanced audit capabilities, IRAs and COPs into a Release 4, tentatively scheduled for Q2 2022, in order to ensure ease of adoption.

The Align project team continues to conduct extensive outreach to keep industry apprised of the status of the Align project. This outreach included updates in the NERC News[8] and Align newsletters.[9] NERC has also set up a training site for Align and other tools that provide training for NERC, Regional Entity, and registered entity staffs on a variety of topics related to Align.[10]

Release of NERC's First CIP Quarterly Report

> On April 30, 2021, NERC released its first CIP Quarterly Report to registered entities to share CIP lessons learned and assure the effective and efficient reduction of risks to the reliability and security of the BPS. NERC will continue to provide these CIP lessons learned reports to registered entities on a quarterly basis going forward.

NERC began work on this effort following FERC's and NERC's release of a Second Joint Staff White Paper on Notices of Penalty Pertaining to Violations of Critical Infrastructure Protection Reliability Standards (Second Joint Staff White Paper) regarding the disclosure of information related to violations of the CIP Reliability Standards on September 23, 2020.[11] Following the release of the Second Joint Staff White Paper, NERC has filed or submitted CIP noncompliance information with a request that the entire filing or submittal be treated as CEII and that Commission staff maintain the confidentiality of such filings or submittals by designating them as CEII in their entirety. In addition, NERC ceased publicly posting redacted versions of CIP noncompliance filings and submittals because of the risk associated with the disclosure of CIP noncompliance information. NERC continues to report CIP noncompliance statistics to the public in its quarterly and annual CMEP reports, which are available on NERC's website.

Harmonization of ERO Enterprise Practices Around Internal Controls

The ERO Enterprise continues harmonization efforts to further align ERO Enterprise practices related to evaluating internal controls as part of compliance monitoring activities. The harmonization efforts focus on the following topics:

- Approaches for reviewing registered entities' testing, design, and implementation of internal controls during CMEP engagements;
- Documenting results of internal control evaluations and providing feedback to registered entities; and
- Incorporating internal control evaluations from CMEP engagements into revised COPs.

In Q2 2021, the ERO Enterprise developed a set of internal controls guiding principles for RE staff to advance the ERO Enterprise's internal control understanding and to facilitate integration of internal control information throughout all CMEP engagements with registered entities. The guiding principles provide foundational elements as the ERO Enterprise works on establishing a framework that will help CMEP staff in identifying, documenting, and assessing internal controls in a consistent and structured manner.

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[8] June 2020 NERC News (posted July 1, 2020) at p. 6, available at https://www.nerc.com/news/newsletters/Newsletters/NERCNews-2020-06%20NEW.pdf; July 2020 NERC News at p. 6 (posted August 3, 2020), available at https://www.nerc.com/news/newsletters/Newsletters/NERCNews-2020-07.pdf; August 2020 NERC News (posted September 1, 2020) at pp. 6-7, available at https://www.nerc.com/news/newsletters/Newsletters/NERCNews-2020-08.pdf.

[9] Align: Registered Entity Newsletter (August 2020), available at https://www.nerc.com/ResourceCenter/Align%20Documents/Align%20Registered%20Entity%20Newsletter_August%202020.pdf; Align: Regional Entity Newsletter (August 2020), available at https://www.nerc.com/ResourceCenter/Align%20Documents/Align%20Regional%20Entity%20Newsletter_August%202020.pdf.

[10] NERC Systems Training, available at https://training.nerc.net/.

[11] *Second Joint Staff White Paper on Notices of Penalty Pertaining to Violations of Critical Infrastructure Protection Reliability Standards*, Docket No. AD19-18-000 (September 23, 2020), available at https://www.ferc.gov/sites/default/files/2020-09/Second%20Joint%20White%20Paper_CIP%20NOP%20Confidentiality_09.23.2020_AD19_18_000_0.pdf.

Program Alignment

The ERO Enterprise is enhancing alignment of CMEP activities under a broader ERO Enterprise Program Alignment Process (Program Alignment).[12] In Q2 2021, NERC staff closed one alignment issue pertaining to a CMEP Practice Guide on application of the Bulk Electric System definition to Battery Energy Storage Systems and Hybrid Resources.[13] Currently, there is one alignment issue submitted via the Consistency Reporting Tool and four CMEP Practice Guides in-progress, which are expected to be completed by the end of 2021. In Q2 2021, NERC also released an ERO Enterprise Practice Guide on Network Monitoring Sensors, Centralized Collectors, and Information Sharing in support of the Department of Energy's 100-Day Plan to enhance the cybersecurity of electric utilities' industrial control systems and secure the energy security supply chain.[14]

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 number is a potential candidate for inclusion in the voluntary Coordinated Oversight Program. 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.

In Q2 2021, the ERO Enterprise approved three additional MRREs for entry into the Coordinated Oversight Program, increasing the total count of registered entities participating to 256.[15]   The Coordinated Oversight Taskforce is focused on increasing MRRE participation in 2021 through regional entity recommendations and outreach.

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

[13] *See* Program Alignment – Issues and Recommendations Tracking, available at https://www.nerc.com/pa/comp/ERO%20Enterprise%20Program%20AlignmentDL/Issues-Recommendations_EXTERNAL.xlsx.

[14] ERO Enterprise CMEP Practice Guide: Network Monitoring Sensors, Centralized Collectors, and Information Sharing (June 4, 2021), available at https://www.nerc.com/pa/comp/guidance/CMEPPracticeGuidesDL/CMEP%20Practice%20Guide%20-%20Network%20Monitoring%20Sensors.pdf.

[15] Appendix B includes further information on the MRREs participating in the Coordinated Oversight Program.

Chapter 2: RE Oversight

Enforcement Oversight
Serious Risk Violations
In Q2 2021, NERC filed three Full NOPs with FERC that included six violations of the operations and planning (non-CIP) Reliability Standards, carrying a total penalty of $880,000. The non-CIP Full NOPs filed in Q2 2021 addressed a mix of serious and moderate risk violations, including:
- Ineffective vegetation management program design;
- Inadequate procedure and protocol for communication regarding Energy Management System issues;
- Inadequate procedure and protocol regarding the limitations of Real-Time Contingency Analysis application capabilities and limitations;
- Lack of procedural guidance for operators and inadequate training on collaborating on maintaining generator voltage or Reactive Power schedule; and
- Lack of sufficient internal controls to ensure proper execution of the voltage and Reactive Power schedule compliance program.

NERC filed eight Full NOPs in Q2 2021 that included 38 violations of the Critical Infrastructure Protection Reliability Standards.

Spreadsheet NOPs
In Q2 2021, NERC filed two SNOPs with FERC that included two violations of the operations and planning (non-CIP) Reliability Standards, carrying a total penalty of about $50,000. These SNOPs included two moderate risk violations. The non-CIP SNOPs filed in Q2 2021 addressed moderate risk issues, including:
- Inadequate procedure and internal controls to review and take action on preventative maintenance report information; and
- Inadequate internal procedures, communication, coordination, and training for Facility Ratings.

NERC filed four SNOPs in Q2 2021 that included 14 violations of the Critical Infrastructure Protection Reliability Standards.

Annual Find, Fix, Track, and Report and Compliance Exception Programs Review
In Q2 2021, NERC completed its review of the documentation provided by the REs for the FY2020 Annual Find, Fix, Track, and Report and CE Survey that NERC jointly conducts with FERC. In Q2, NERC issued RFIs to the REs and will share the final feedback with the REs by Q3 2021. In Q4 2021, NERC will be issuing a final report that it will file with FERC.

Compliance Monitoring Oversight
NERC Oversight
In Q2 2021, NERC executed monitoring oversight activities planned for 2021. These activities include the following:
- RE-specific follow-up related to prior oversight recommendations; and
- Recurring oversight coordination specific to ERO Enterprise efforts around Compliance Oversight Plans (COPs) enhancement and alignment.

Compliance Oversight Plans
During Q2 2021, REs continued to develop COPs using results of the Inherent Risk Assessment (IRA) and performance considerations such as internal controls, culture of compliance, compliance history, event analysis trends, or other regional considerations to identify key risks. COPs include the NERC Reliability Standards and Requirements associated with identified risks, the targeted interval of monitoring activities, and the type of CMEP tools (such as

Compliance Audit, Spot Check, or Self-Certification). NERC will continue to monitor development of COPs throughout the remainder of 2021 to ensure ERO Enterprise alignment.

Certification

Q2 2021 Certification Completions

In accordance with the March 18, 2020 FERC and NERC announcement providing guidance to ensure grid reliability amid potential coronavirus impacts, the ERO Enterprise conducted no in-person, certification site visits in Q3 2020, Q4 2020, Q1 2021, or Q2 2021. During Q2 2021, the ERO Enterprise completed the certification of a Transmission Operator in Texas RE's footprint, and a certification review of an entity's EMS replacement. The ERO Enterprise continues to implement a risk-based approach on engagements and has determined no further reviews were needed for a backup control center relocation and three versioning upgrades to a BA/TOP EMS. Appendix D provides a breakdown by RE.

Registration

In Q2 2021, NERC processed 76 Registration changes, of which 45 were functional activations and 31 were functional deactivations. Of the 31 functional deactivations:

- Twelve were facility shutdowns,

- Ten were determined not to meet registration criteria,

- Five where compliance responsibility was assumed by another registered entity,

- Two were determined to be DP-UFLS only and registered as such, and

- Two were sold to another registered entity.

BES Exception Requests

In Q2 2021, NERC completed one Exception Request and expects to complete two other Exception Requests currently under review in Q3 2021.

Chapter 3: ERO Enterprise Performance Objectives

Priorities for 2021
To guide enforcement and compliance monitoring activities in 2021, NERC has identified the following priorities:

- Continue with delivery of Release 3 and Release 4 of the Align tool;

- Provide training and education to RE CMEP staff to enhance the ERO Enterprise work products (e.g., working papers);

- Evaluate post-COVID-19 monitoring activities;

- 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;

- Continue rollout of enhanced Compliance Oversight Plans for engagements in 2021;

- Continue to focus on how registered entities have mitigated reliability and security risks while achieving compliance with the Reliability Standards, including intentional focus on internal controls; and

- File proposed revisions to the NERC ROP, specifically around the CMEP, with FERC for approval.

2021 Metrics
In 2021, the ERO will continue to monitor and report on key CMEP and ORCP activities.

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 or identified by the REs or NERC that has not yet been processed by filing with FERC (Full NOPs and SNOPs), submission to FERC (FFTs and CEs), or being dismissed. As of Q2 2021, approximately 8 percent of the open violations are from 2018 and older.
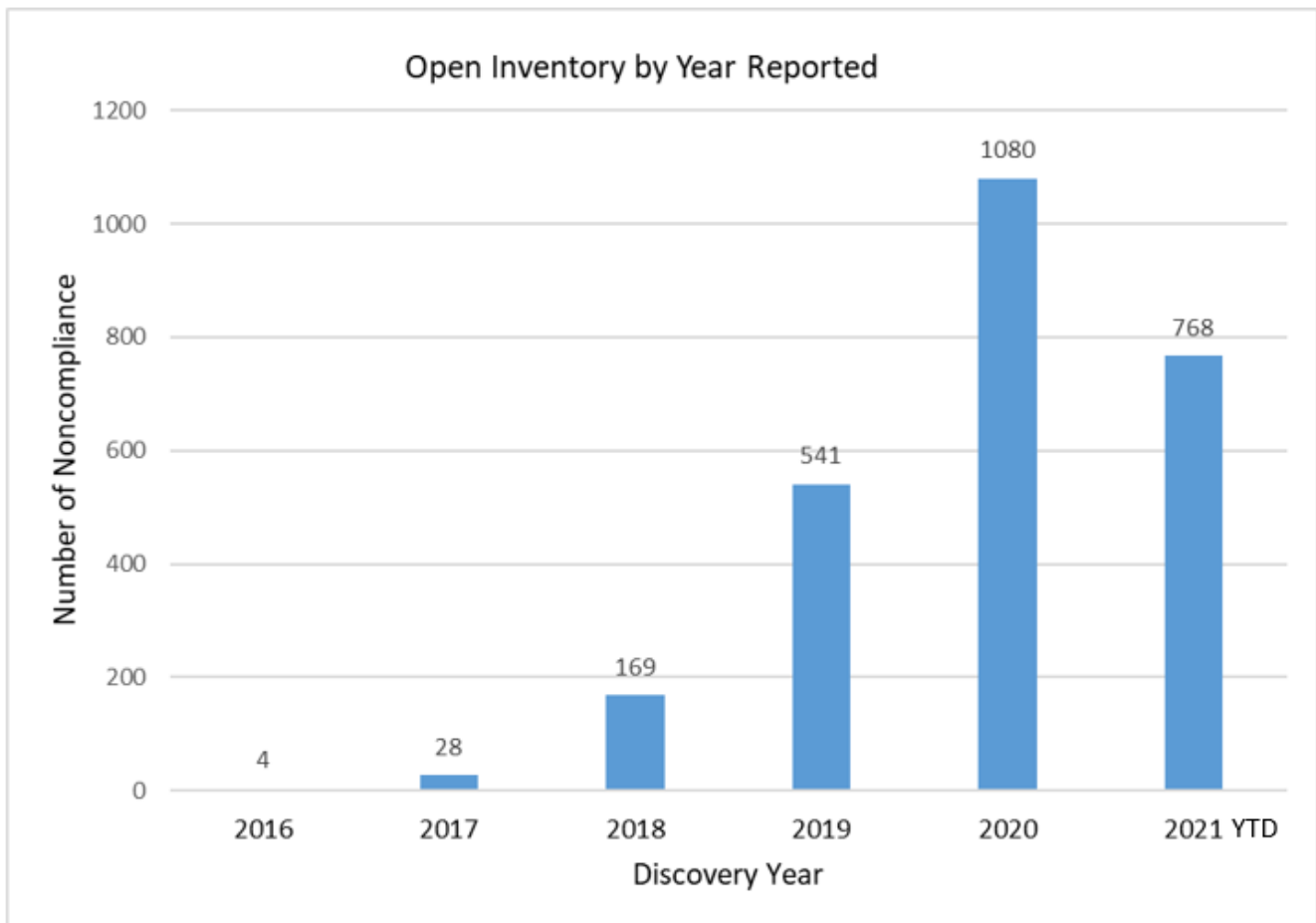
Figure A.1 ERO Enterprise's Inventory by Year Reported

Reported Age of Noncompliance in ERO Enterprise Inventory

Figure A.2 shows the age of all open noncompliance in the ERO Enterprise inventory. The percentage of noncompliance in inventory that was less than one year old increased from 49 percent in Q1 2021 to 51 percent in Q2 2021. The percentage of noncompliance in inventory between one and two years old decreased from 35 percent in Q1 2021 to 32 percent in Q2, and the percentage of noncompliance in inventory over two years old increased from 16 percent in Q1 2021 to 17 percent in Q2. Information about mitigation of the noncompliance in inventory can be found in the "Mitigation of Noncompliance" discussion below.

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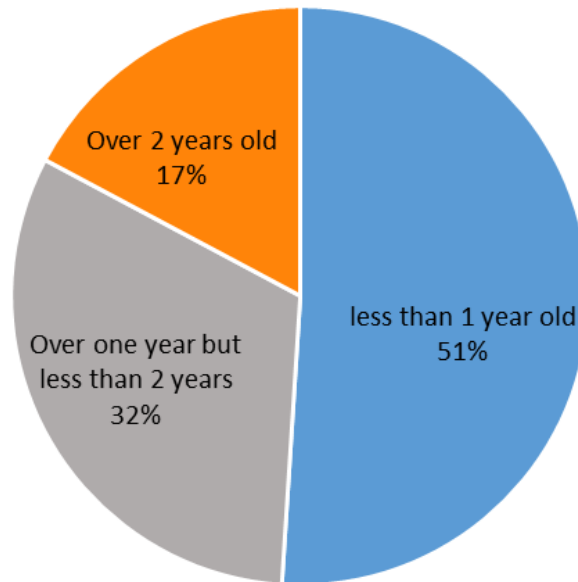
Figure A.2: Age of Noncompliance in ERO Enterprise's Inventory

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 Q2 2021 was 13.96 months.[16] There has been a modest decrease in the average age of noncompliance in the ERO Enterprise inventory over the last few quarters, dropping from 14.6 months at the end of Q4 2020 to the current 13.9 months, reversing a trend of increasing average age over the last few years. The ERO Enterprise has been processing older noncompliance in inventory and implementing streamlined methods for processing lower risk noncompliance, helping to drive down the average age of noncompliance in the ERO Enterprise inventory.
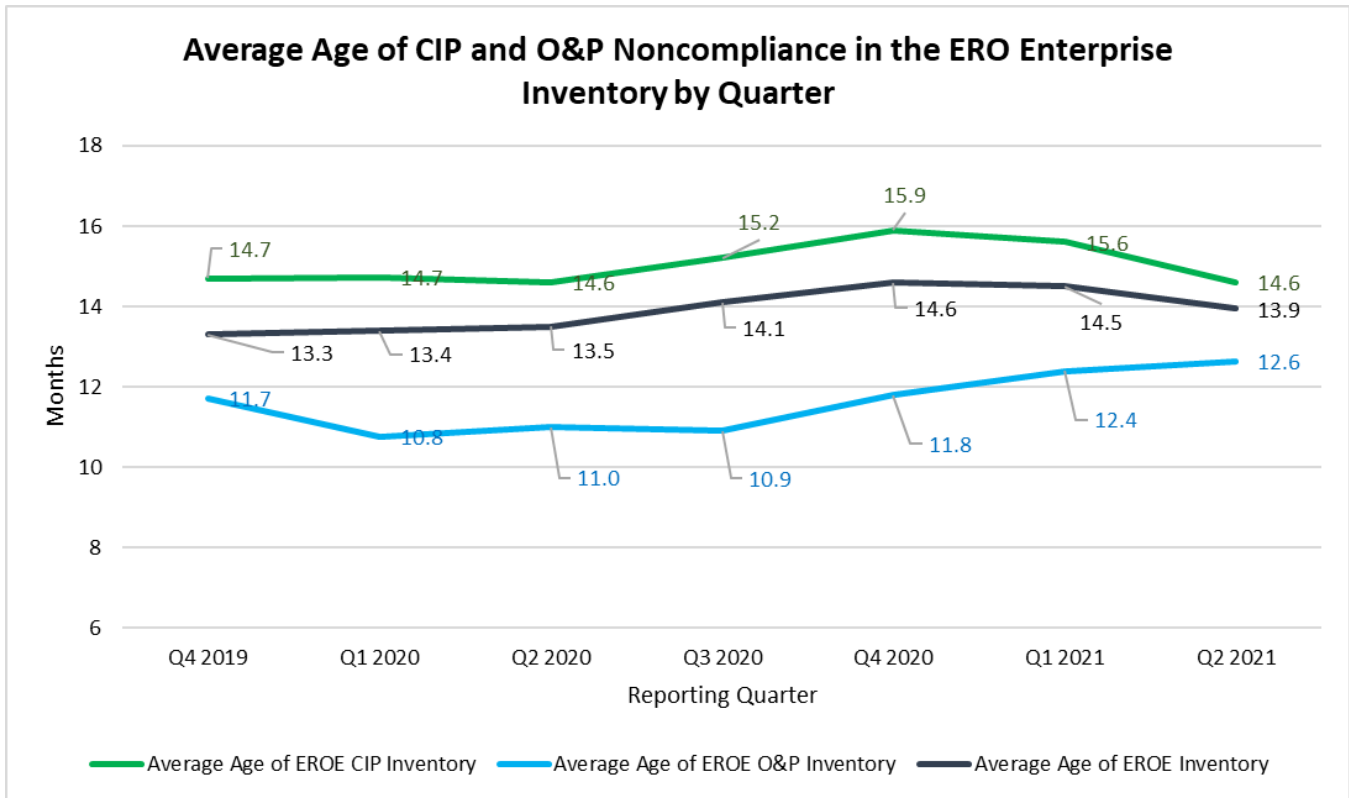

Figure A.3: Average Age of Noncompliance in the ERO Enterprise Inventory

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[16] 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 Through Q2 2021
Figure A.4 shows the number of new noncompliance discovered through Q2 2021 compared to the total number of noncompliance discovered in prior years.
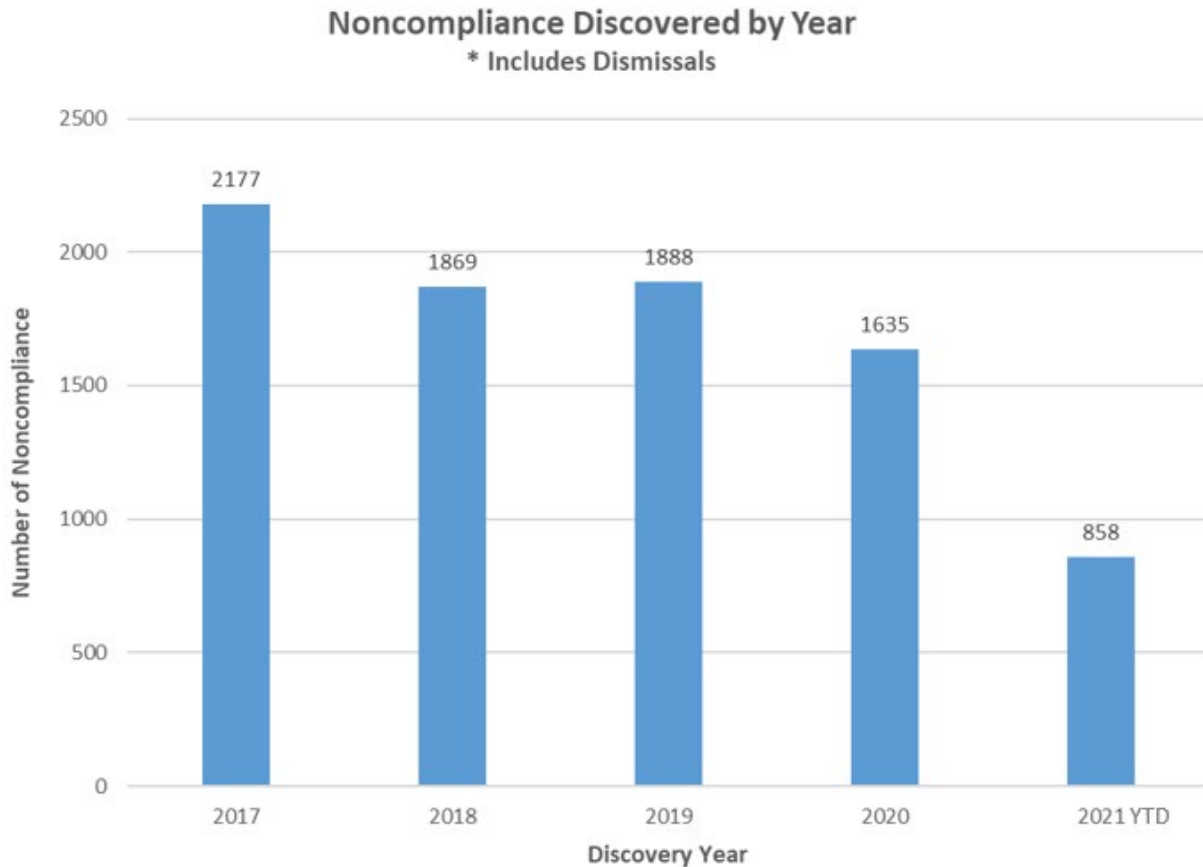

Figure A.4: Noncompliance Discovered by Year

Self-Assessment and Self-Identification of Noncompliance
Figure A.5 illustrates registered entities' internal and external identification of noncompliance by year. Self-Reports and Self-Certifications are treated as internal identification of noncompliance, while Compliance Audits, Spot Checks, and all other methods of discovery are treated as external identification of noncompliance. Figure A.6 shows the percentage of noncompliance by discovery method over the last four quarters.

A comparison of Figures A.5 and A.6 shows a decrease in externally discovered noncompliance over the last few years, dropping from approximately 20% externally discovered noncompliance in 2018 and 2019, to less than 10% to date in 2021. The ERO Enterprise will continue to monitor and analyze this trend.
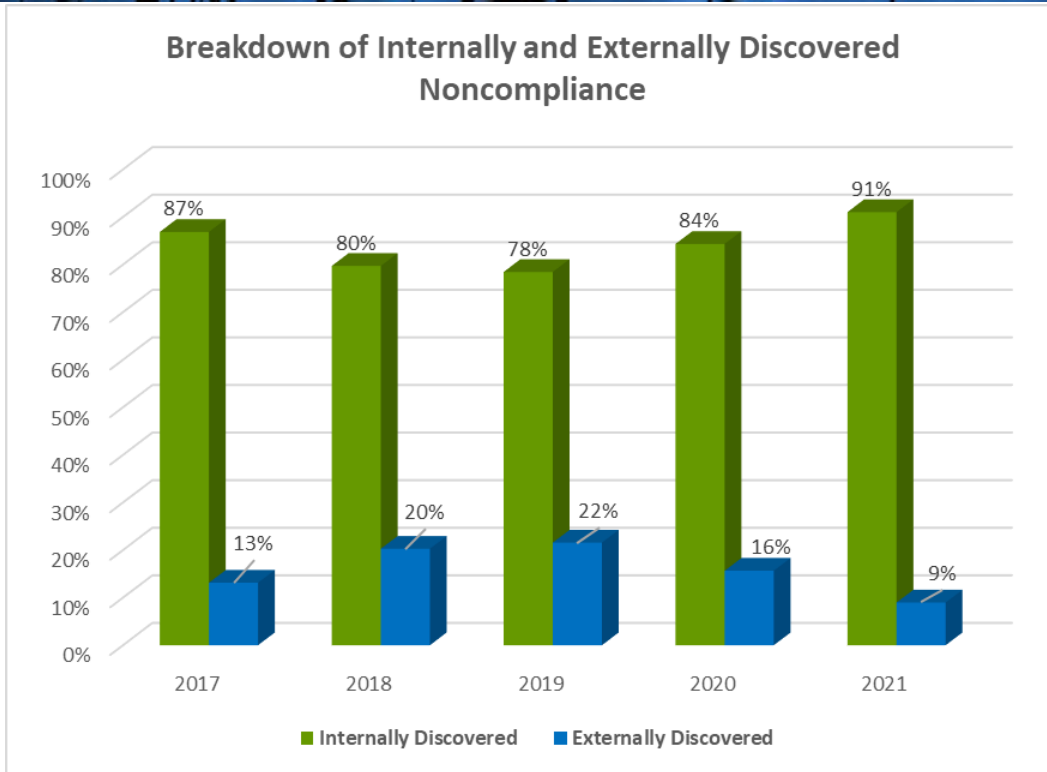
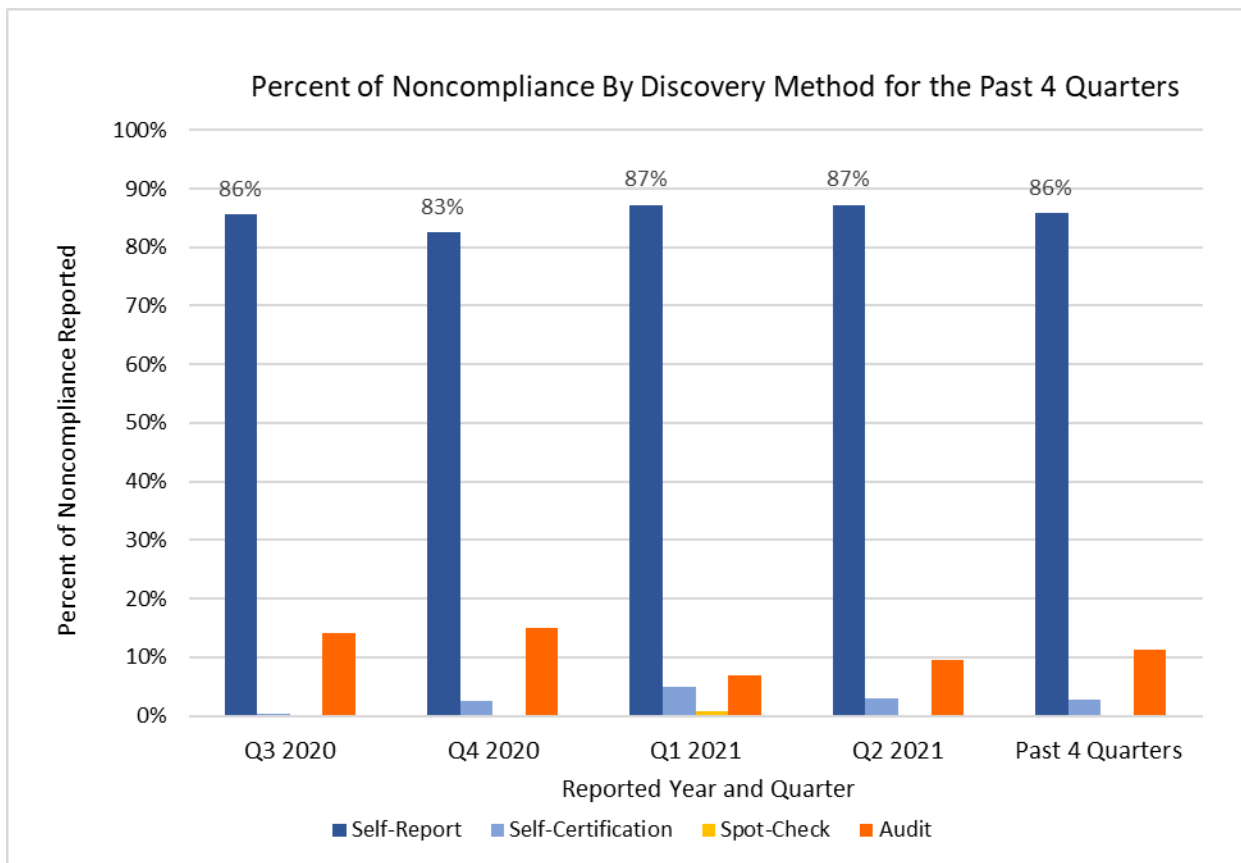**Figure A.5: Breakdown of Internally and Externally Discovered Noncompliance by Year**

Figure A.6: 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.7. Mitigation of the oldest noncompliance, dating from 2017 and earlier, is largely complete. The noncompliance without verified mitigation completion dates involves noncompliance that: 1) has mitigating activities that have been certified as complete but have not yet been verified complete by the RE, 2) has mitigation activities that have passed the expected completion date (and presumably have been completed), or 3) has mitigation activities with a future completion date, ensuring risk to the BPS is being addressed via ongoing mitigation efforts. A small percentage of pre-2018 noncompliance do not yet have verified mitigation completion dates, but are part of ongoing discussions between REs and registered entities regarding appropriate mitigation activities. NERC continues to monitor these noncompliances as priorities for mitigation completion.

Table A.7: 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**
2015-2017[17]	3,705	123	96.7%
2018	1,596	117	92.7%
2019	1,657	343	79.3%
2020	1,539	751	51.2%
2021	831	646	22.3%

Disposition of Noncompliance
Number and Percentage of Self-Logged CEs

Table A.8 shows both the number and percentage of self-logged CEs filed over the last five years. Through Q2 2021, self-logged CEs have increased above the approximately 20% level seen in 2018-2020 to reach 26.5% of all CEs submitted in 2021.

Table A.8: Number and Percentage of Self-Logged CEs			
Filing Year	**Self-Logged CEs**	**Total CEs**	**Percentage of Self-Logged CEs**
2017	86	940	9.1%
2018	159	770	20.6%
2019	220	1,153	19.1%
2020	194	1,069	18.1%
2021	154	582	26.5%
CEs- Grand Total	813	4,514	18.0%

Disposition of Noncompliance

Figure A.9 shows the percentage of all noncompliance processed by disposition type through the end of Q2 2021. The ERO Enterprise processed a majority of noncompliance in 2021 as CEs, with approximately fourteen percent of noncompliance processed by the SNOP or Full NOP disposition methods, both of which can involve a monetary

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[17] All noncompliance reported to the ERO Enterprise prior to 2015 have been fully mitigated.

penalty or sanction. Figure A.10 shows the number of noncompliance processed by disposition type over the last five years. Figure A.11 shows the number of noncompliance processed by assessed risk level over the last five years. Consistent with data from recent years, of the noncompliance processed in 2021 to date, the ERO Enterprise processed more than 74% of the noncompliance as a Compliance Exception and assessed approximately 77% of the noncompliance as a minimal risk to the reliability of the BPS.

Disposition Breakdown in 2021

FFT, 11%

SNOP, 3%

Compliance Exception, 74%

NOP, 11%
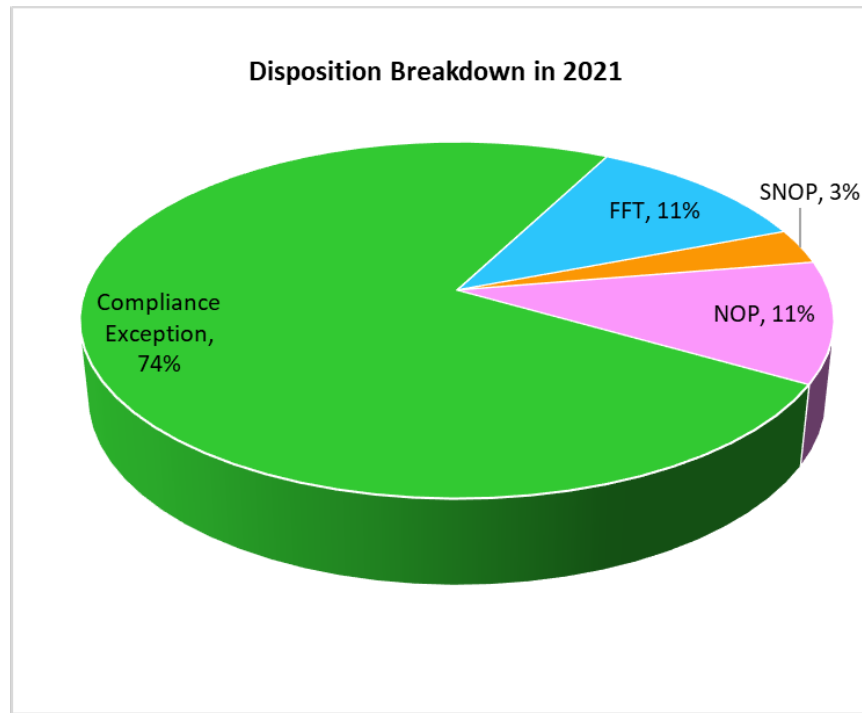
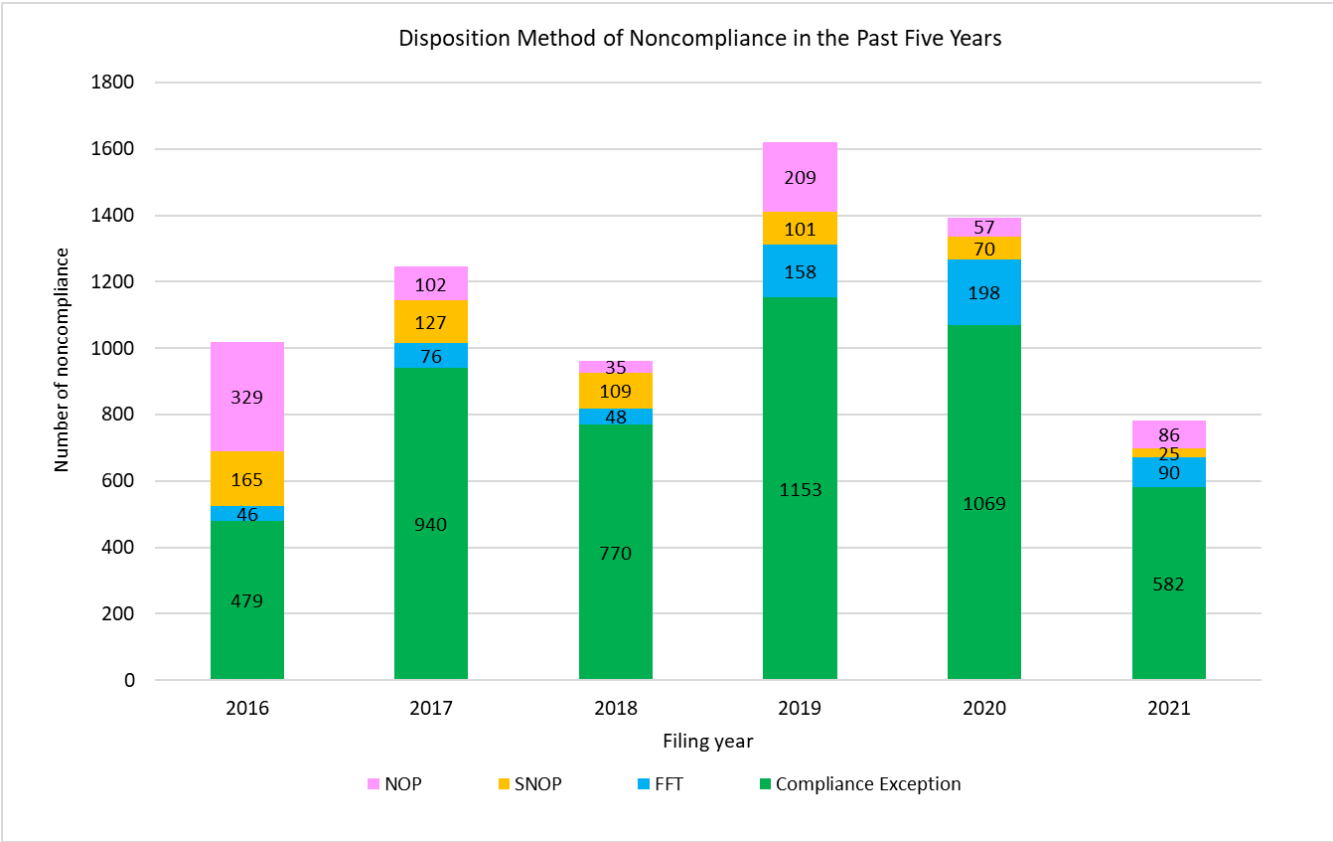**Figure A.9: Disposition Type of Noncompliance Processed in Q2 2021**

Figure A.10: Disposition Method of Noncompliance by Filing Year
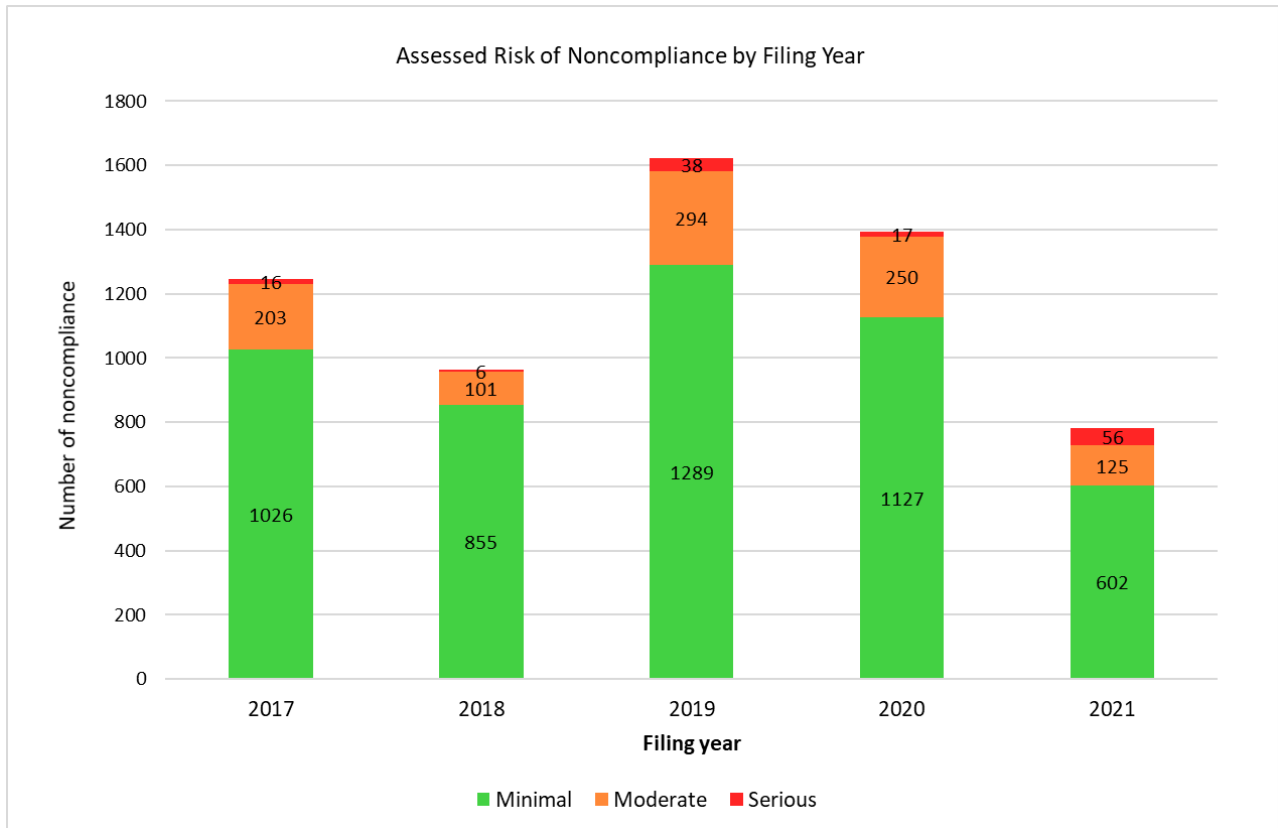

Figure A.11: Assessed Risk of Filed Noncompliance by Filing Year

Risk of Noncompliance
Most Violated Standards by Risk in 2020–Q2 2021

As shown in Figure A.12, CIP-007 remains the most frequently violated Reliability Standard followed by CIP-004 and CIP-010. The majority of these noncompliances were disposed of as CEs. CIP-007 and CIP-010 were tied for the most serious risk violations filed in the period, while CIP-007 had the most moderate risk violations. CIP-007 and CIP-004 were nearly tied for the most minimal risk violations filed in the period.
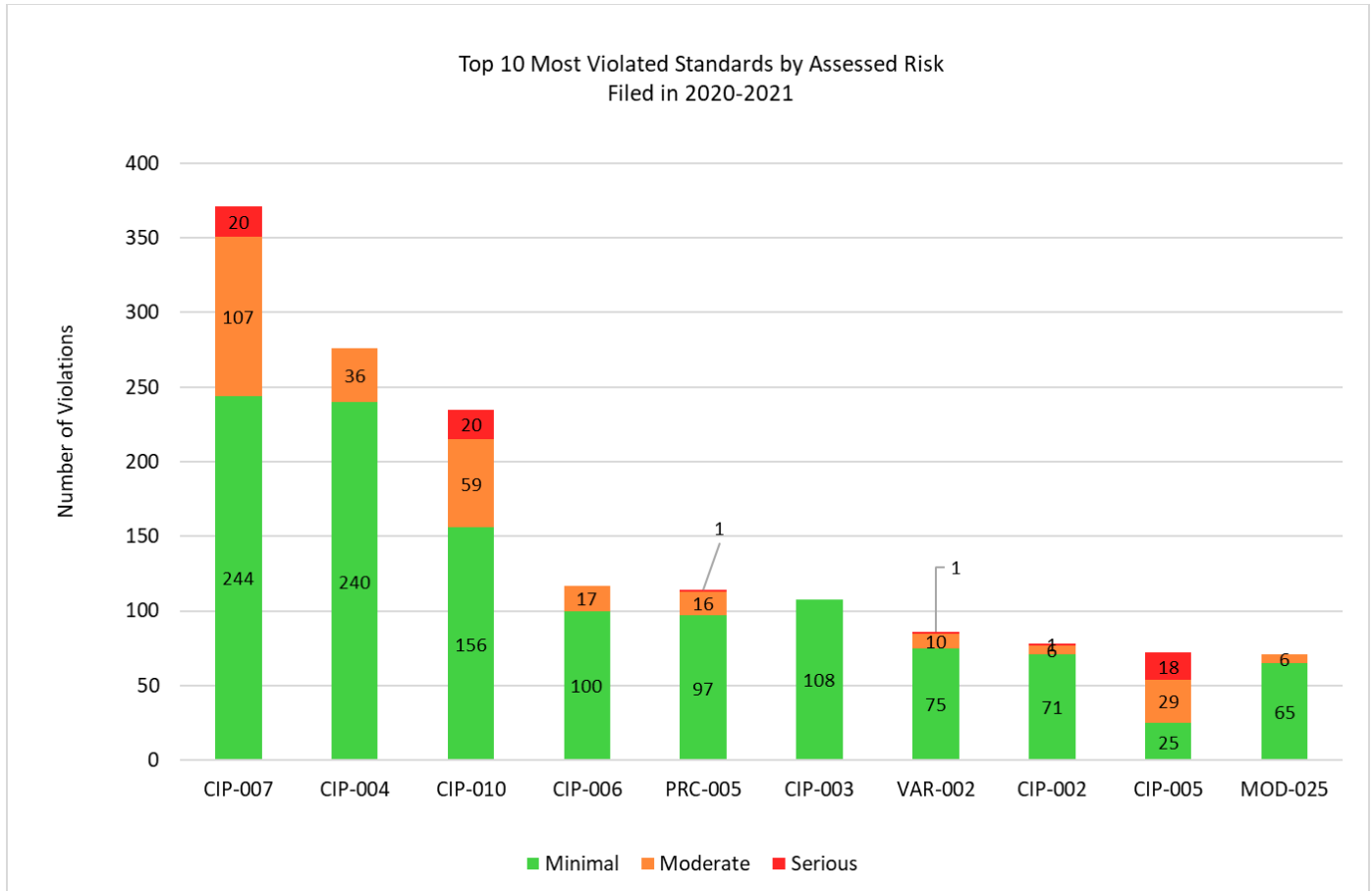

Figure A.12: Most Violated Reliability Standards by Risk Level in 2020–Q2 2021

Violations Posing a Serious Risk

NERC has gathered data and regularly monitored violations posing serious risk to the reliability of the BPS. In the period from 2020-Q2 2021, the ERO Enterprise has filed 73 serious risk violations with FERC, which represented approximately two percent of all filed noncompliance during that period. As shown in Figure A.13, the 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, baselines, categorization of BES Cyber Systems, and protection of BES Cyber System Information. The serious risk O&P violations involved Facility Ratings, vegetation management, loss of control center functionality, training of system operators, Protection System maintenance and testing, and generator voltage schedules.
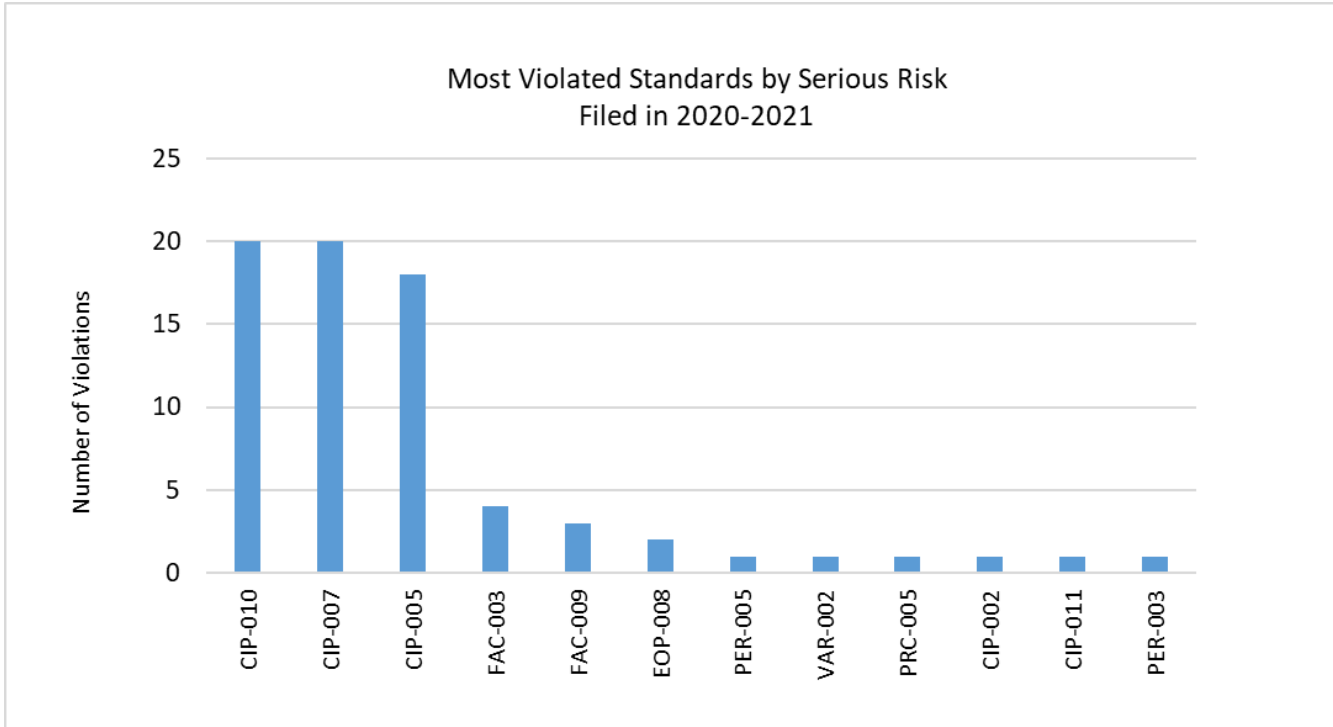
Figure A.13: Reliability Standards with Serious Risk Violations[18]

Serious Risk Averages

Figure A.14 shows the percentage of serious risk violations, both CIP and O&P, 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. Figure A.14 shows that the percentage of filed serious risk violations has remained below five percent over the last eight three-year periods, even with an uptick in the most recent three-year period. Serious risk CIP violations have tended to drive the overall percentage of filed serious risk violations over the last several years.

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[18] Although the currently effective version of the Reliability Standard addressing Facility Ratings is FAC-008-3, some violations involving Facility Ratings extend back in time to FAC-009-1, as seen in Figure A.13.
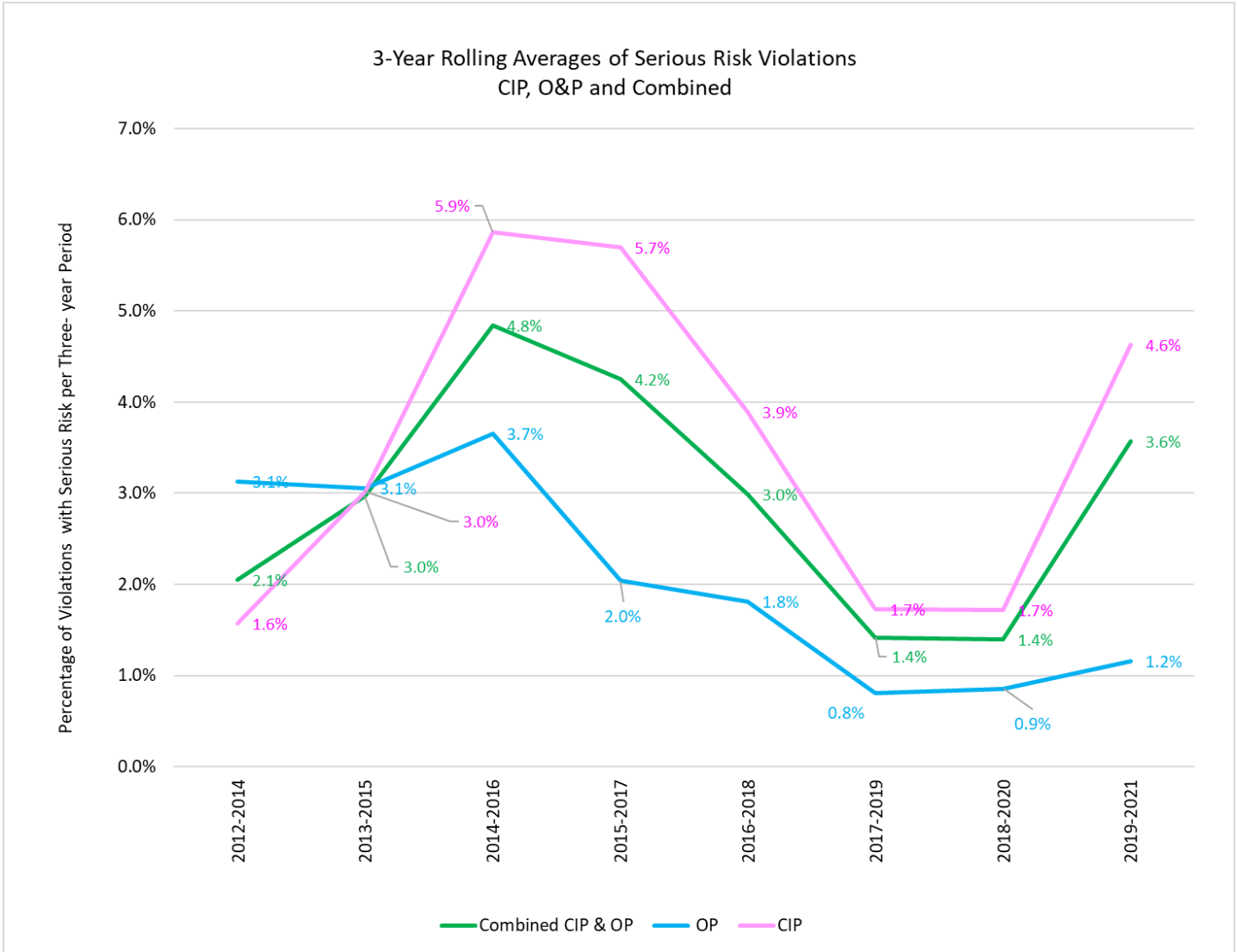
3-Year Rolling Averages of Serious Risk Violations
CIP, O&P and Combined

Figure legend: Combined CIP & OP — OP — CIP

Figure A.14: Rolling Average of Serious Risk Violations (CIP and O&P)

Repeat Moderate and Serious Risk Violations

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

Figure A.15 compares three categories of moderate and serious risk noncompliance: noncompliance with compliance history, noncompliance with compliance history involving similar conduct, and all filed moderate and serious risk noncompliance. Noncompliance with similar conduct is a subset of the wider group of repeat noncompliance, in which the entity's current noncompliance involves similar conduct or a similar cause as prior violations of the same or similar Standard and Requirement. Such situations could result in aggravation of the disposition method or aggravation of a penalty for the current noncompliance. The total moderate and serious noncompliance includes both "new" noncompliance and repeat noncompliance. Figure A.16 shows similar information using a three-year rolling average for the same three categories.

Figure A.16 shows the same information as in Figure A.15, but averaged over a three-year period. The ERO Enterprise will continue to analyze the information as the year progresses and highlight any notable trends in future quarterly reports.
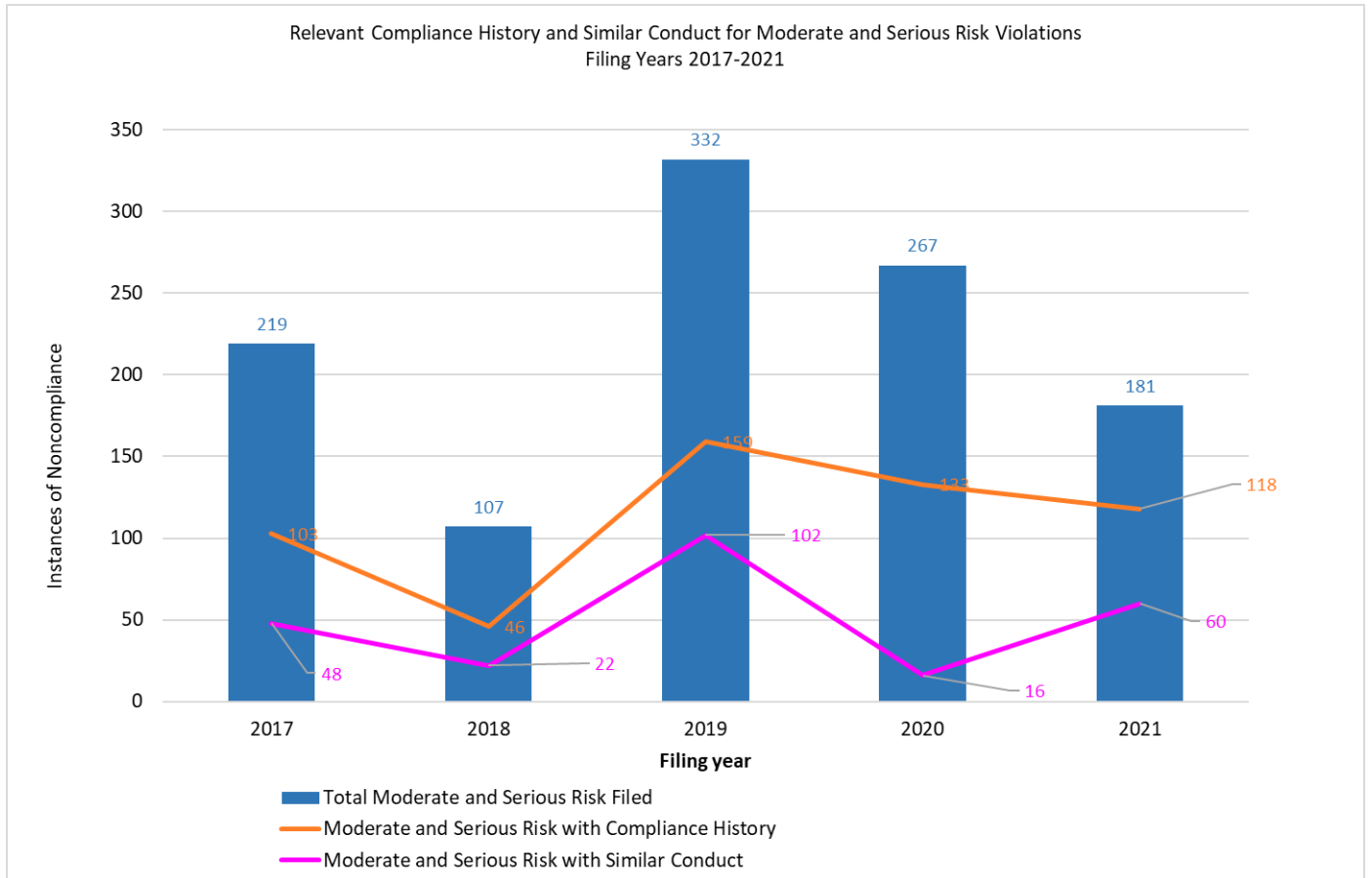

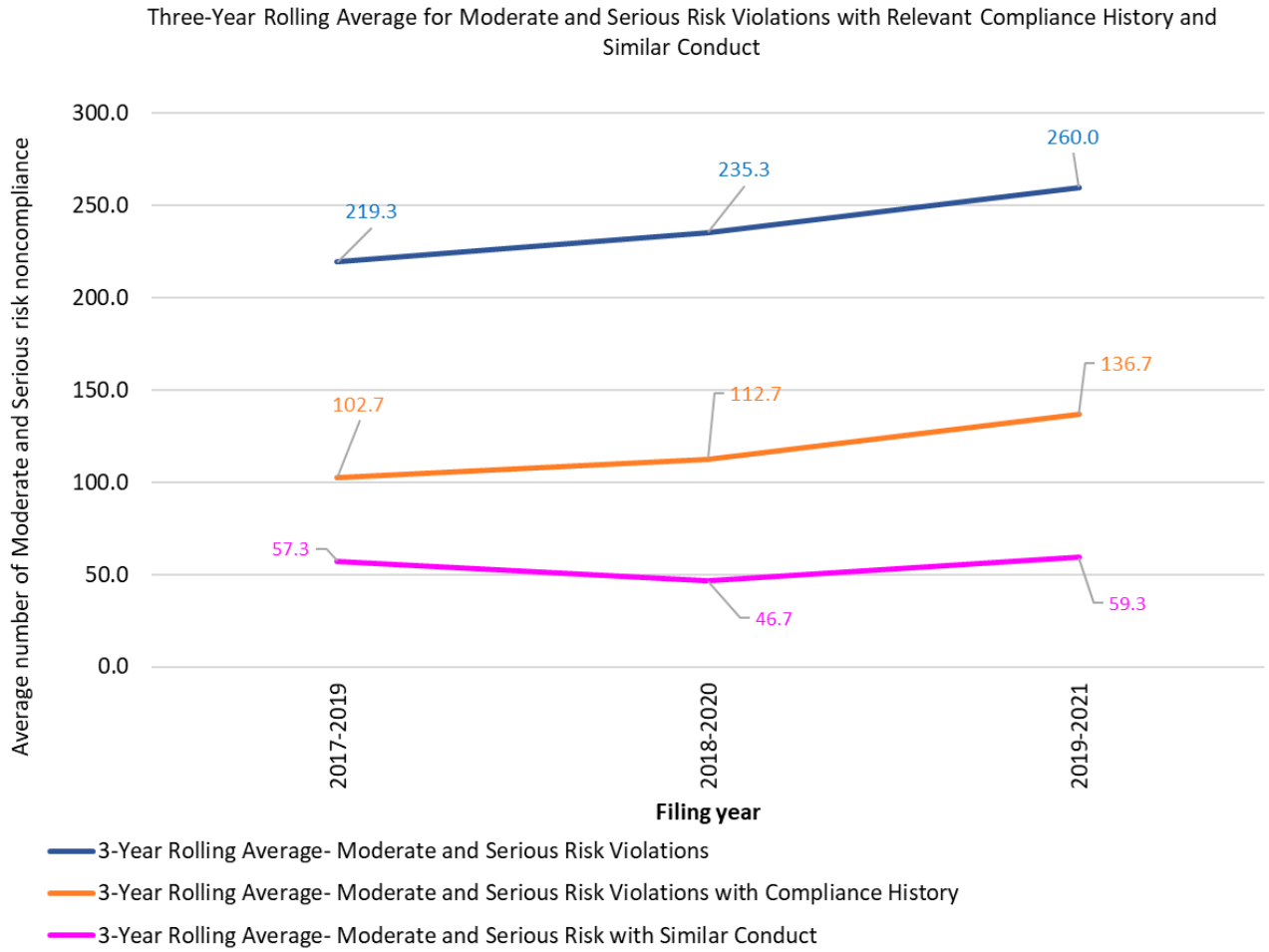**Figure A.15: Compliance History and Similar Conduct for Moderate and Serious Risk Violations**

Three-Year Rolling Average for Moderate and Serious Risk Violations with Relevant Compliance History and Similar Conduct

Figure A.16: 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, as displayed in Figure A.17 below. Second, NERC tracks transmission outages resulting from possible violations of FAC-003, as displayed in Figure A.18 below. 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.

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 12 Category 3 outages reported in 2021 so far.[19] Registered entities reported these outages through periodic data submittals on a quarterly basis.

In 2021, NERC has filed two Full NOPs resolving violations of FAC-003-4 R2 and R6, which were initially reported in 2018, 2019 and 2020.[20]
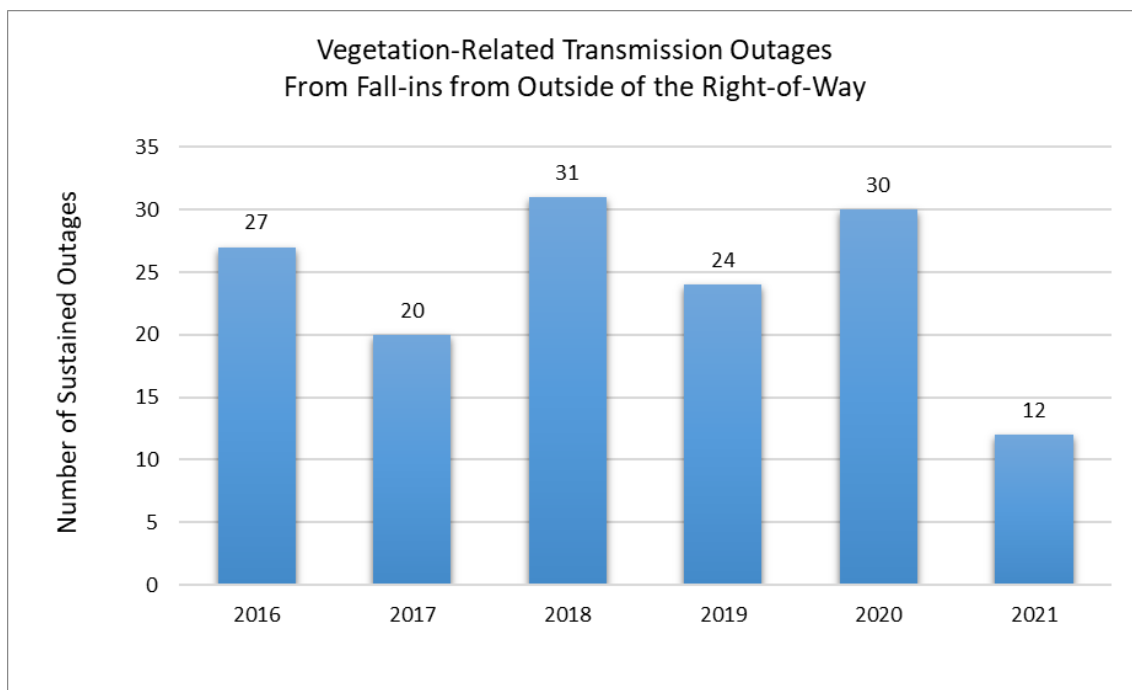

Figure A.17: Vegetation-Related Outages by Category

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[19] Vegetation-related outage information is consolidated on a delayed quarterly basis. Due to Align release 2, periodic data reporting will be delayed until August 2021.

[20] *See* FERC Docket No. NP21-6-000, available at https://www.nerc.com/pa/comp/CE/Enforcement%20Actions%20DL/Public_FinalFiled_NOP_NOC-2697.pdf; and FERC Docket No. NP21-14-000, available at https://www.nerc.com/pa/comp/CE/Enforcement%20Actions%20DL/Public_FinalFiled_NOP_NOC-2704.pdf.
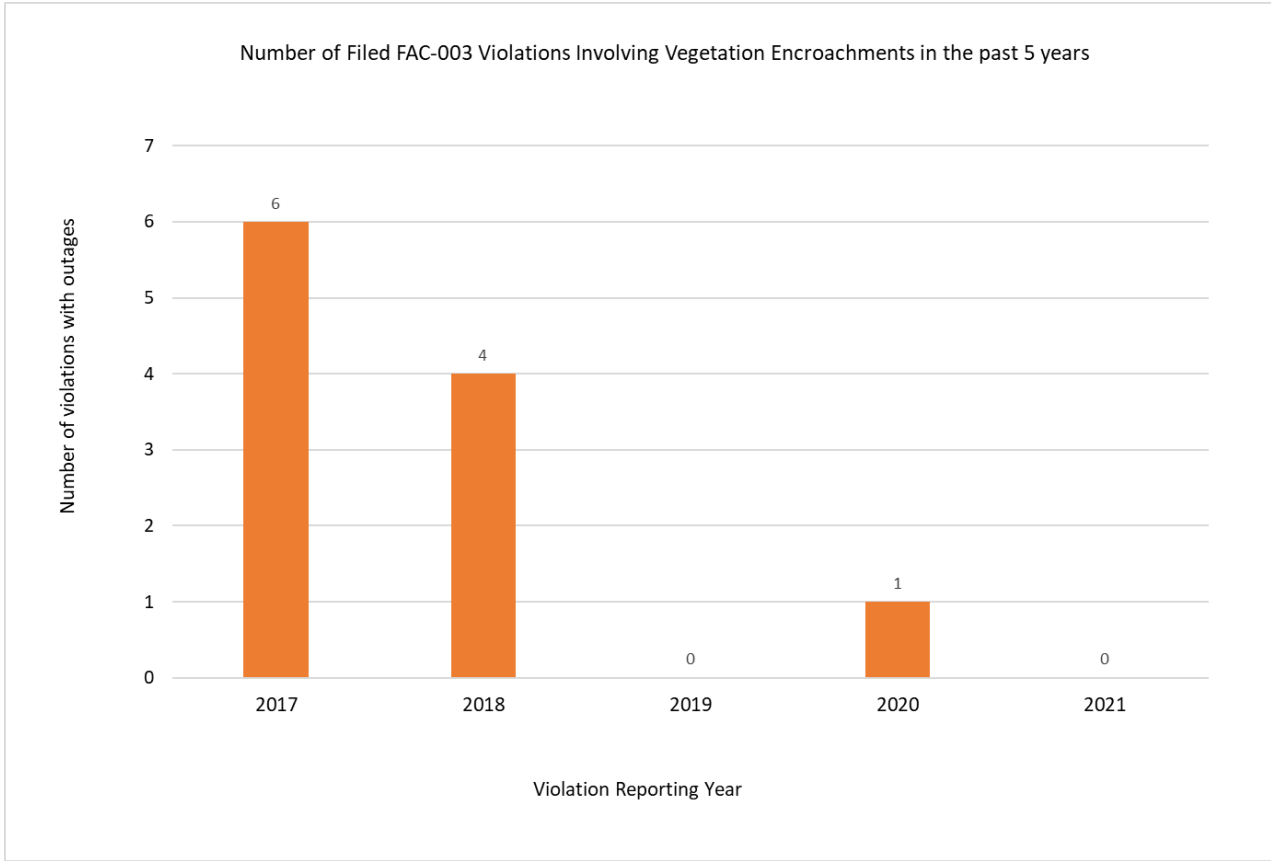
Number of Filed FAC-003 Violations Involving Vegetation Encroachments in the past 5 years

Figure A.18: Outages Resulting from Possible FAC-003 Violations

Appendix B: Compliance Assurance

Coordinated Oversight Program for MRREs

Figure B.1 represents the distribution of the 60 MRRE groups (comprising 256 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.
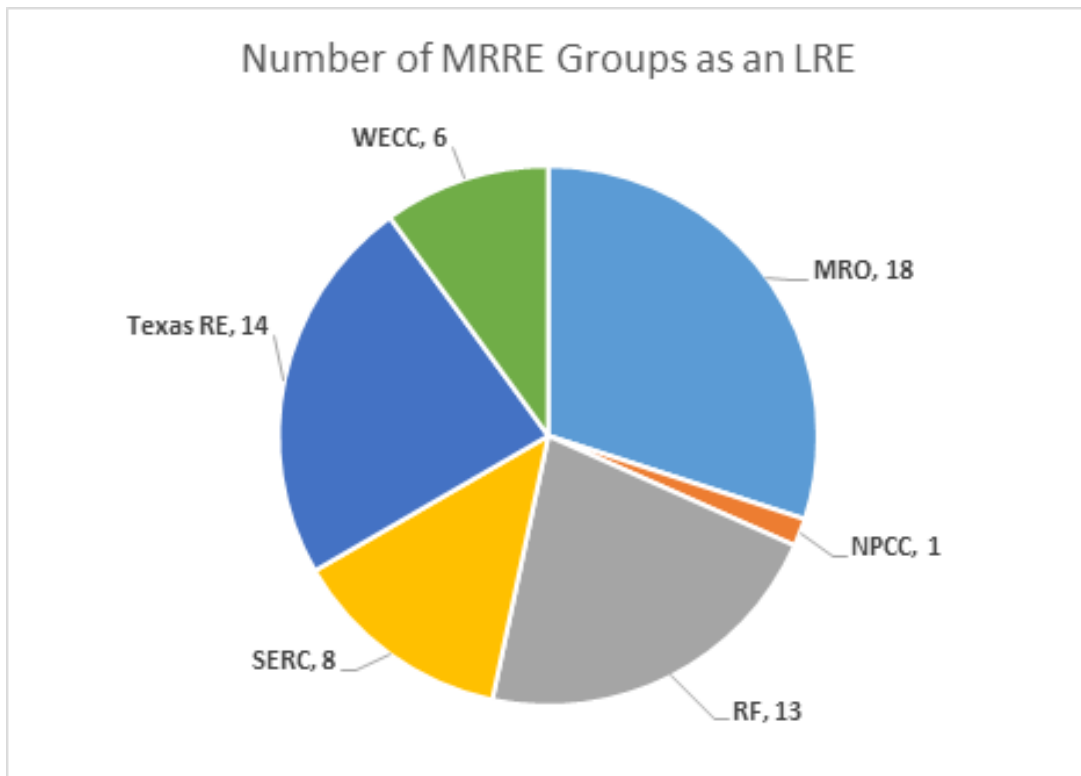

Figure B.1: Distribution of MRREs under Coordinated Oversight by Lead RE
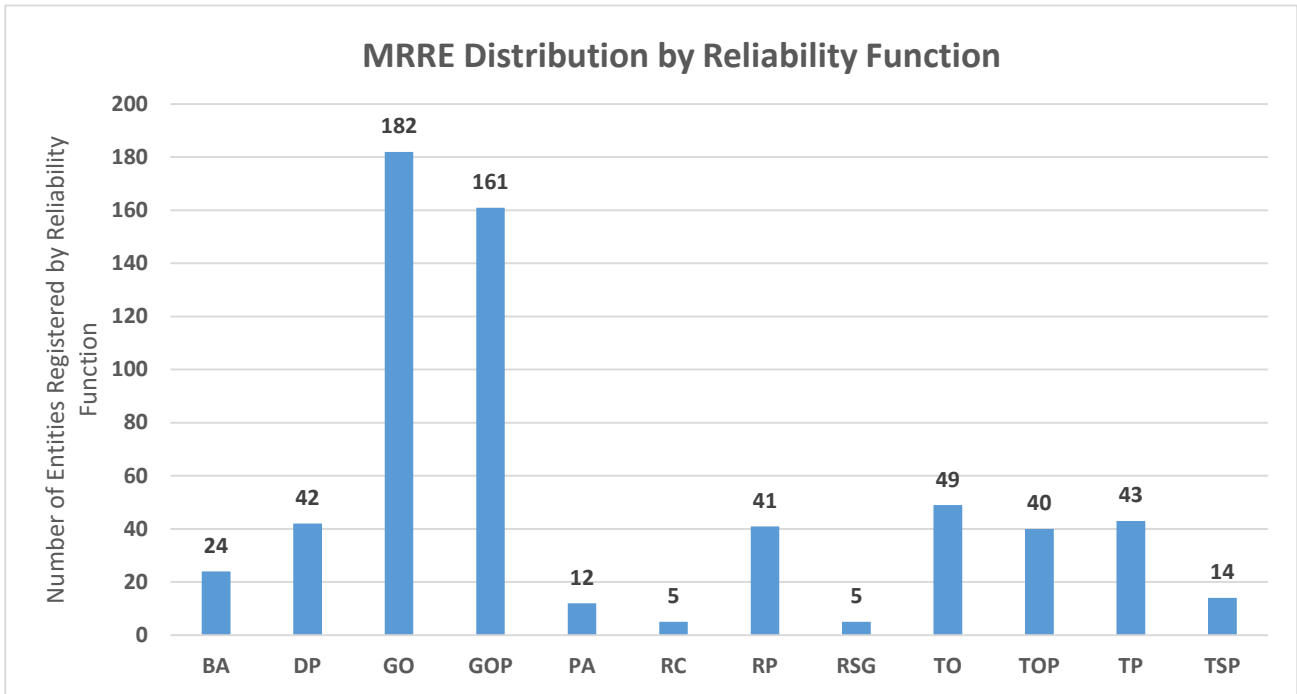
Figure B.2: Coordinated Oversight Distribution by Registered Function[21]

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

Appendix C: Registration

Registration Change Activity by Function
Figure C.1 and Table C.1 depict Q2 2021 registration change activity by RE. Figure C.2 and Table C.2 depict Q2 2021 registration change activity by function.
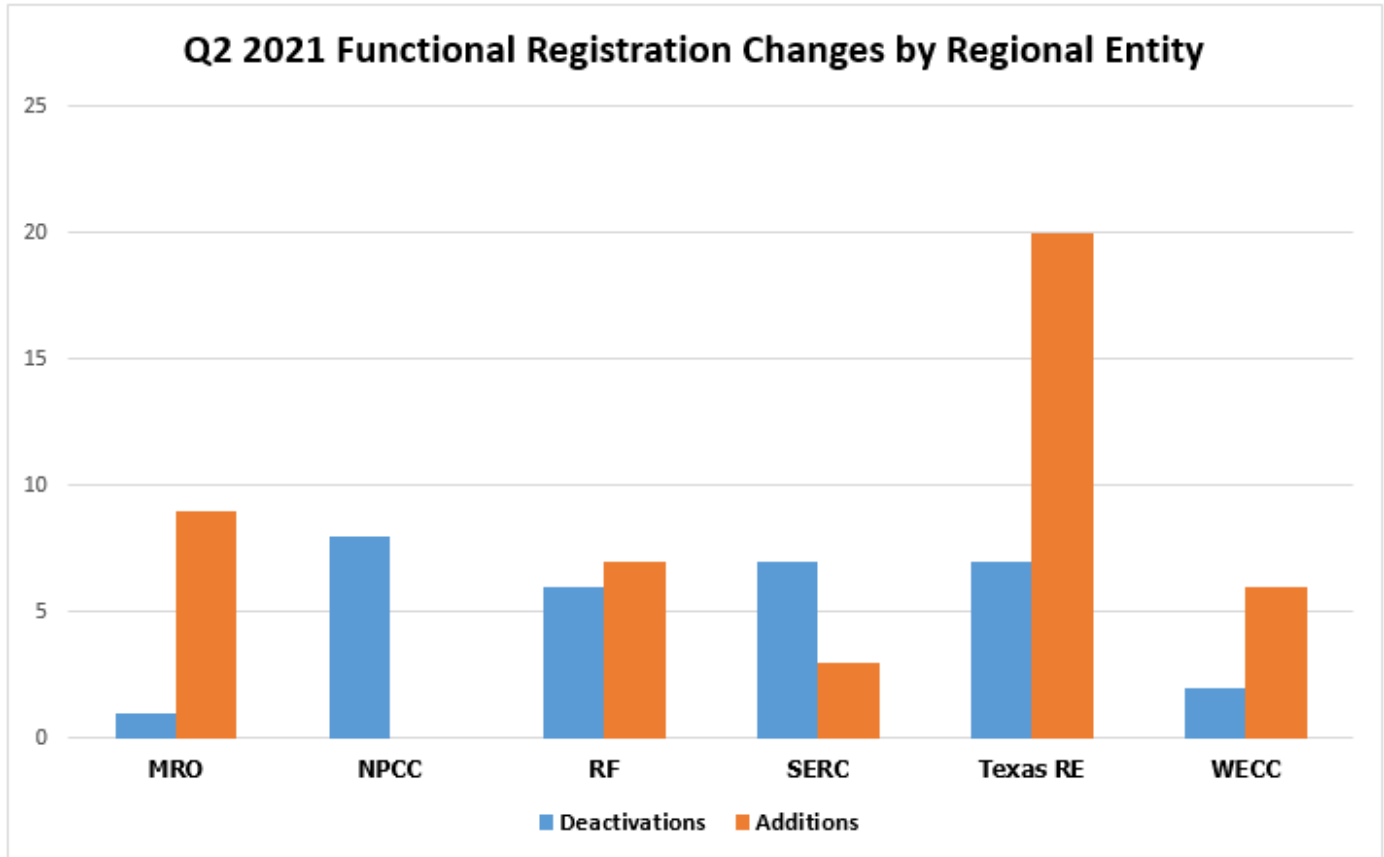

Figure C.1: Q2 2021 Functional Registration Change Activity by RE

Table C.1: Q2 2021 Functional Registration Change Activity by RE						
	MRO	**NPCC**	**RF**	**SERC**	**Texas RE**	**WECC**	**TOTAL**
Deactivations	1	8	6	7	7	2	31
Additions	9	0	7	3	20	6	45

Figure C.2: Q2 2021 Registration Change Activity by Function
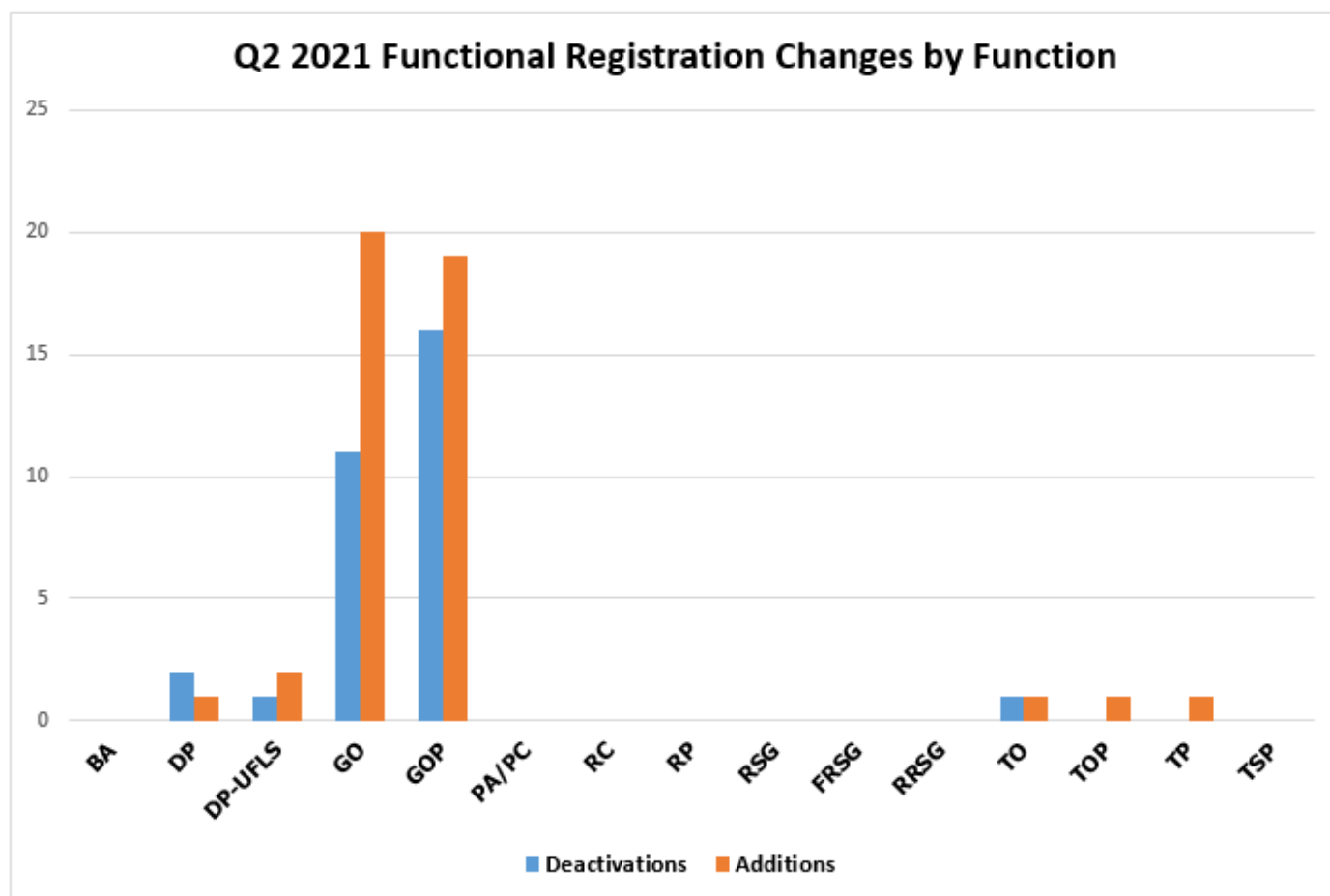
Table C.2: Q2 2021 Registration Change Activity by Function								
	DP	**DP-UFLS**	**GO**	**GOP**	**TO**	**TOP**	**TP**	**TOTAL**
Deactivations	2	1	11	16	1	0	0	31
Additions	1	2	20	19	1	1	1	45

Table C.3 shows the basis for Q2 2021 registration changes. NERC seeks justification from each RE when approving registration change activity.

Table C.3: Q2 2021 Registration Change Basis	
Shutdown	12
Determined to no longer meet registration criteria.	10
Compliance responsibility assumed by another registered entity	5
Determined to be DP-UFLS and registered as such	2
Sold to another registered entity	2

Appendix D: Certification and Bulk Electric System

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 Q2 2021 and the number of new entity certifications where activity has been initiated but not yet concluded (in process). Figure D.2 identifies the number of reviews of changes to already-certified and operational entities completed by each RE during Q2 2021 and the number of certification reviews in process at the end of Q2 2021.
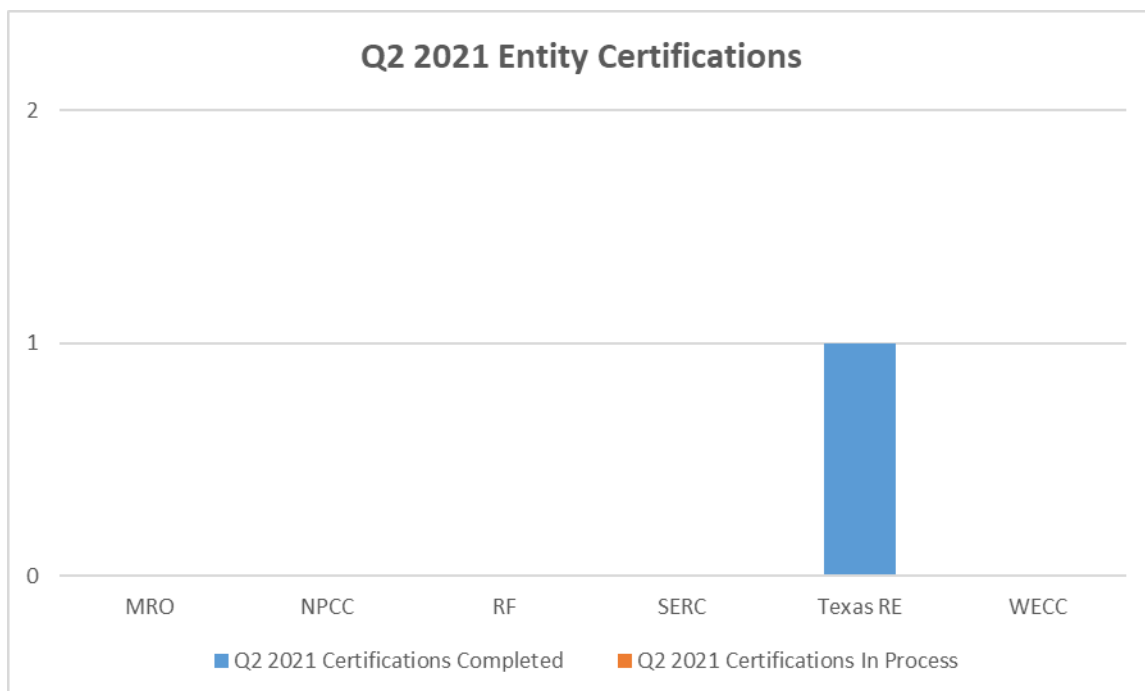

Figure D.1: Q2 2021 New Entity Certifications by RE

Table D.1: Q2 2021 Organization Certifications		
Function	**Completed**	**In Process**
Reliability Coordinator	0	0
Transmission Operator	1	0
Balancing Authority	0	0
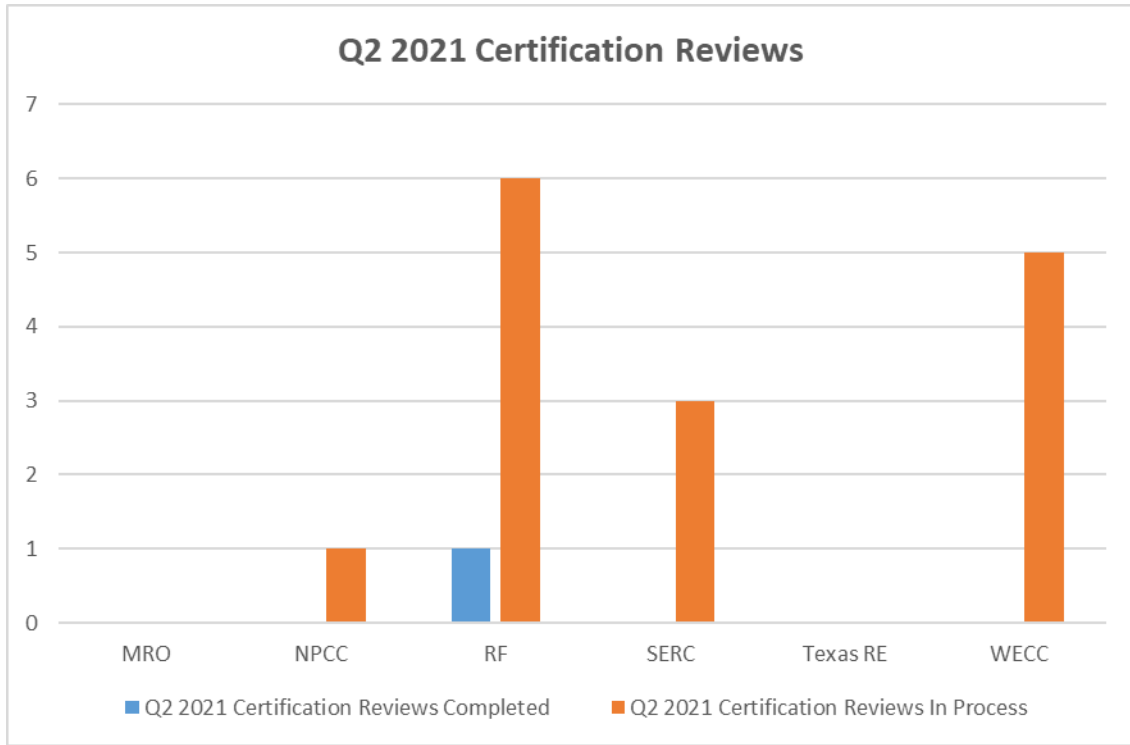
Figure D.2: Q2 2021 Certification Review Activity by RE

Table D.2: Q2 2021 Certification Review[22]		
Change Basis	**Completed**	**In Process**
Changes to a registered entity's footprint	0	3
Relocation of the Control Center	0	2
Changes to Supervisory Control and Data Acquisition (SCADA)/Energy Management System (EMS) System	1	11

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[22] Some entities have multiple triggering events for certification reviews.